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KOUMYS.

By L. Wolff, M.D.

Read at the Pharmaceutical Meeting, May 18th.

When, at the last pharmaceutical meeting, the question arose, how to prepare a good and reliable article of koumys by a rational method, I stated that my experience with it had long been of an unsatisfactory nature, but, after continued experiments, I had been able to obtain very good results.

There had appeared in the Journal at various times in 1874 and 1875 directions and formulæ for the preparation of this milk wine, so much praised as a nutrient in wasting diseases, and justly much employed of late years in this country; but none of them served me towards preparing a koumys at all corresponding to that of the Kirghizians on the steppes of Asiatic Russia.

A very interesting article in the "American Journal of Pharmacy," 1874, p. 570, from the "Pharmaceutical Journal and Transactions," gives a very excellent description of the koumys cure, and the prepa ration of koumys, as practiced by the Tartars on their native steppes, but it leaves the distant pharmacist at this side of the Atlantic, where no Tartar mares nor mares' milk can be had, at a loss of how to reproduce it in this country.

H. and N. Schultze, of Berlin ("Amer. Jour. Pharm.," 1875, page 68), direct an addition of sugar of milk to cows' milk, and its fermentation by brewers' yeast; any one that has tried has probably succeeded as little in making koumys according to their directions as I have. Schwalbe in the same article contributed by Dr. A. W. Miller uses condensed milk, dissolved in water, to which he adds lactic acid and rum, puts it in a Liebig's bottle, and charges the whole with carbonic acid gas, and sets it in a warm room until fit for use.

In another article of the Journal, 1875, page 261, the Russian method of fermenting mares' milk by a home-made yeast is quoted,

with still another one, 1875, page 83, from the "Allgem. Med. Centralzeitung," 1874, page 1108, recommends milk, grape sugar and fresh beer yeast to be fermented together at a temperature of 88°F. until fermentation has set in, when it is to be bottled, and shaken every fifteen minutes for the next forty-eight hours (not a very pleasant job).

In 1876 I formed the acquaintance of a Russian gentleman, visiting this city, who had made koumys in his native country, and together we experimented, but with very indefinite results, until we imported, at considerable expense, some of the original ferment from Russia, and with it prepared koumys, which certainly effervesced very much, had a rich, creamy appearance, did not coagulate in heavy curd, was slightly acidulated, but possessed a rank, acrid taste, which I attributed to the ferment, whose odor was certainly not very inviting. The consequence was that the koumys, which had been made at a considerable outlay, never enjoyed the reputation it ought to have acquired, and the costly ferment was gradually left to die out.

As the demand for it again increased, I was sorely puzzled how to make a koumys that would be all that is required of it, and that would possess all its virtues and properties. I tried in vain all the above-given methods, but invariably obtained sour milk with a heavy curd as a result, indifferently effervescing, while the taste was enough to cure any hankering the patient may have had after the coveted milk wine.

When considering the nature of koumys and its peculiar features, it appears evident that its properties must be largely due to the nutritious quality of the milk, along with the alcohol produced by the fermentation of its sugar, while its rich effervescence makes it readily digestible even to weak and enfeebled stomachs. The cause of success in its manufacture from mares' milk is undoubtedly due to the large amount of sugar of milk contained therein, which is 80 parts in 1,000 to 40·37 in cows' milk; while the albuminates in the former are but 16·41 to 54·04 in the latter (Ranke's "Physiology"), so that the object in view seems to be to increase the amount of sugar in the milk while decreasing the albuminates, should the latter be required.

As the sugar of milk when added to milk is not directly induced to fermentation by ordinary yeast fungi, I was soon led to substitute grape sugar for it, into which the former has to be changed before undergoing vinous fermentation, and which, though not in the same quantities, yields by fermentation the same results—carbonic acid gas and

alcohol. But still while following the directions of some of the above quoted authorities, I found my koumys soon to curd and sour—a most unsightly article, whose acetous odor forbade its use.

As I was inspecting, one day, the fermenting rooms of one of our larger breweries, I was struck by the low, icy temperature maintained there, and on inquiry was informed that if the temperature were allowed to rise the fermentation would be sure to prove wild, signifying sour or acetous fermentation. This showed me at once the reasons of my former failures, and when I applied the principle involved to my own koumys, I had the satisfaction of drawing from my bottles a rich creamy, homogeneous liquid, slightly acidulated, foaming like the choicest soda water, of an agreeable taste, such as I exhibit here a specimen of, and some of which has been used by many physicians in their practices with excellent results, proving a sustaining nutriment which was readily borne by even the weakest stomachs.

In concluding, I give the formula employed by me, by which I am certain every pharmacist can produce a good and reliable article, at a reasonable cost, which, with a remedy consumed in such quantities as this, is of no small importance, and I have no doubt that nothing would bar even its dispensing as a beverage at our soda fountains.

Take of grape sugar half an ounce; dissolve in four ounces of water. In about two ounces of milk dissolve twenty grains of Fleischman's compressed yeast, obtained at any grocery store, or else well-washed and pressed out brewers' yeast. Mix the two in a quart champagne bottle, which is to be filled with good cows' milk to within two inches of the top; cork well, and secure the cork with strings or wire, and place in an ice chest or cellar at a temperature of 50°F., or less, and agitate three times a day. At the expiration of three to four days at the latest, the koumys is ready for use, and should not then be kept longer than four or five days.

It should be drawn with a champagne siphon tap, so that the carbonic acid gas may be retained and the contents will not entirely escape on opening the bottle.

Philadelphia, May, 1880.

KOUMYS, OR MILK WINE.

By G. L. Truckenmiller, Ph.G.

Read at the Pharmaceutical Meeting May 18.

I noticed in the May number of the "American Journal of Pharmacy" that a member present at the Pharmaceutical Meeting desired a formula for preparing "koumys." There are several manufacturers who prepare this food, each claiming superiority over the other.

The formula herewith presented has been tested and found to be equal to any in the market.

Skimmed milk,	Cong. i.
White sugar,	℥iv.
Yeast,	q. s.

Dissolve the sugar in the milk and bottle in quart champagne bottles, add two ouncee of bakers' yeast to each bottle, cork and tie over, set in warm place until fermentation is well under way, then lay on side in a cool cellar. It will be ready for use in from three to four days.

A champagne tap is indispensable for drawing koumys.

An interesting pamphlet has been compiled by Messrs. C. A. Bowman & Co., Peoria, Ills., from which I will take the liberty of copying a few extracts which may be of interest to your readers:

"Koumys is a sparkling beverage, prepared from pure sweet milk, possessing greater nourishing, strengthening and blood producing powers than any other kind of food.

"It is held in high estimation by the physicians of all schools as a reliable remedy for dyspepsia, imperfect digestion, nausea, general debility, consumption, catarrhal affections, etc. Its constituents are those which produce blood, bone and muscle."

ON CHESTNUT LEAVES.

By Lewis Joseph Steltzer, Ph.G.

From an Inaugural Essay.

Chestnut leaves should be gathered for medicinal use in the months of September and October, while still green; they possess a faint characteristic odor. When gathered in the early part of October they lose in drying 49 per cent. of their weight, retaining most of their green color, except the midrib, which changes to brown. They do not become brittle, and are, therefore, with difficulty reduced to powder.

The leaves contain a considerable amount of tannin and extractive matter. The powder cannot be percolated alone on account of swelling when water or alcohol is added. A fluid extract is made by repeatedly digesting the leaves in water and expressing the juice, adding glycerin and sugar and evaporating, as recommended by Prof. J. M. Maisch ("American Journal of Pharmacy," Dec., 1871). A tincture made in the proportion of two ounces of the leaves to a pint of diluted alcohol is also frequently used.

Chestnut leaves were first brought to the notice of the medical profession by Mr. Geo. C. Close, in the year 1862, but were used by some physicians and in domestic practice previous to that time. They have been used with good success as a remedy for whooping cough; appear to control the spasms and often cause their suspension in a few days. The fluid extract is probably the best preparation to use, as it contains the drug in a concentrated form and is not unpleasant to take. The tincture may also be used, but the objection to it is the large dose required and the amount of alcohol contained therein.

For the purpose of ascertaining some of the constituents of the leaves they were subjected to the following experiments:

The infusion possessed an astringent taste, producing with ferric chloride a greenish-black precipitate, and a copious precipitate with solution of gelatin, showing the presence of tannin. The infusion was deprived of coloring matter, tannin, etc., with solution of subacetate of lead, filtering, and separating lead with sulphydric acid. The liquid appears to be free from sugar. The cold infusion showed the presence of albumen when heated, and by the precipitate produced with solution of mercuric chloride. Alcohol precipitated gum, soluble in excess of water, and this solution was not precipitated with ferric chloride or sodium borate.

Ten grams of the ground leaves were boiled with successive portions of water until the soluble parts were all dissolved, the different solutions mixed, filtered and treated with solution of gelatin until it ceased to afford a precipitate. This was separated by filtration, washed, dried and weighed; the result was 1·70 gram, equal to about 0·9 gram of tannin. A repetition of this experiment gave nearly the same result. This experiment shows 9 per cent. of tannin present in chestnut leaves. After removing the tannin from the infusion by means of fresh hide the filtrate was not affected by ferric chloride, and was, therefore, free from gallic acid.

The alcoholic tincture possessed a dark green color by reflected light and brown color by transmitted light. Upon evaporation a dark green extract was obtained. Its solution in water, in which it is slightly soluble, gives a black precipitate with ferric chloride. A portion of the tincture was evaporated to a small bulk, thrown upon water and the insoluble portion filtered out, again dissolved in alcohol and treated with animal charcoal; when filtered the solution was colorless, and left no residue when evaporated. The solution of the extract in chloroform, when treated with purified animal charcoal, filtered and evaporated, left a small quantity of a soft, yellowish substance, probably resin. By the treatment of the leaves with petroleum benzin and evaporating a quantity of fatty matter is obtained, freely soluble in ether. Negative results were obtained when examining for an alkaloid and volatile oil.

One hektogram of the dried leaves was incinerated; 5·40 grams of ash of a light gray color was obtained, having an alkaline reaction.

Appropriate tests indicated the presence of carbonates, chlorides and phosphates of potassium, calcium, magnesium and iron, while the organic constituents of the leaves are tannin (9 per cent.), gum, albumen, resin (a trace), fat, extractive and lignin.

CITRIC ACID IN THE CRANBERRY.

By George A. Ferdinand, Ph.G.

From an Inaugural Essay.

The following experiments were made with the view of determining the nature of the free acid contained in the ripe cranberry, Vaccinium macrocarpon, Aiton:

The berries were bruised, boiled with water and strained; the residue was again and repeatedly boiled and the liquid expressed until the last portion thereof and the residue were neutral to litmus paper. The various liquids were then mixed and treated with alcohol to remove the pectin; the precipitated pectin was mixed with clean sand, dried at a temperature of 100°C., again placed on a filter and washed with alcohol until the washings gave a neutral reaction with moistened litmus paper. The mixed filtrates were concentrated to drive off the alcohol, after which the garnet-red liquid remaining was allowed to stand until cold, when it was saturated with calcium carbonate and solution of calcium hydrate. The filtrate and cold washings were boiled, evaporated to

one-half and filtered while boiling hot. On adding half its volume of alcohol to the filtrate a precipitate formed which was removed by filtration; twice its volume of alcohol was added to the filtrate, the resulting precipitate dissolved in acetic acid, alcohol added, and filtered. To this filtrate lead acetate was added, then ammonium hydrate to neutralization, and the precipitate, after repeated washings, was suspended in water, hydrogen sulphide passed through it, filtered, evaporated to half and treated as follows: (α) With solution of calcium hydrate no precipitate; (β) with lead acetate a barely perceptible precipitate that fell to bottom of the tube when boiled; (γ) boiled with nitric acid, evaporated to dryness, dissolved residue in water, added excess of sodium carbonate, filtered; treated filtrate with calcium chloride which produced a precipitate that was entirely dissolved in acetic acid. The above reactions having demonstrated the absence of malic acid, succinic acid was now sought for, but the failure of neutral ferric chloride to produce any change in the clear concentrated liquid filtered from the lead sulphide denoted the absence of this acid.

The original precipitate obtained by treating the juice with calcium carbonate and solution calcium hydrate was now examined. After being again well washed with cold water a portion thereof was placed in a tube, mixed with solution of potassium hydrate, triturated and allowed to stand for several hours, when the clear liquid was poured off and boiled. The failure of a precipitate to appear with this treatment is a sufficient proof of the absence of tartaric acid.

Another portion of the precipitate was now taken, an excess of sodium carbonate in solution added, boiled and filtered. The absence of oxalic acid in the filtrate was shown by the precipitate produced on the addition of calcium chloride, being wholly dissolved by acetic acid.

An examination for citric acid was made as follows: The juice of the berries was taken, boiled and while hot saturated with calcium carbonate and solution of calcium hydrate. This was placed on a filter, and the precipitate, after being thoroughly washed with boiling water, was collected and dried. It was then treated with cold water, filtered and to a portion (α) of the filtrate calcium chloride added, which upon boiling produced a white precipitate; (β) adding silver nitrate to another part of the filtrate produced a white precipitate which turned black only after long boiling; (γ) another portion of the solution being mixed with a few drops of solution of potassium permanganate and heated showed no reduction of the potassium permanganate. δ To the last

portion of the filtrate solution of calcium hydrate in excess was added, but no reaction was observable until the liquid was boiled, when a white precipitate formed which partially dissolved on cooling. These combined tests demonstrate the presence of citric acid.

Now to find the percentage of this acid in the cranberry, 100 grams were bruised and the juice obtained (by the process described above) was treated as before with calcium carbonate and solution of calcium hydrate. After being filtered, and the precipitate washed, the filtrate was mixed with more than an equal bulk of alcohol, again filtered and the resulting precipitate of calcium citrate dried at a temperature not exceeding 149°C. The anhydrous calcium citrate thus obtained was found to weigh 2·094 grams. The citric acid that can be produced therefrom is readily calculated, and amounts to $\frac{384 \times 2{\cdot}094}{498} = 1{\cdot}41$ gram.

An attempt was made to estimate the amount of free acid in the filtered juice by means of a decinormal solution of alkali, but, although the color of the liquid was changed when made alkaline, the change was so gradual that no accurate results could be obtained. For a like reason the change in the color of a litmus solution added could not be noted.

The cranberries used for the foregoing experiments were picked the first week in October and kept in good condition until required for this analysis, two months later.

COMMERCIAL EXTRACT OF KRAMERIA.

By John Wilson Hoffa, Ph.G.

From an Inaugural Essay.

Having for several years past noticed the inferior quality of different extracts of krameria in the market I decided to give them a fair trial, and have obtained the following results:

The extracts were procured from different leading manufacturers of fluid and solid extracts. One hundred grains of each were powdered, and macerated for four days in 4 fluidounces of cold distilled water. At the expiration of that time the solutions were filtered, and the insoluble portions collected, carefully dried and weighed, thus giving the amount of insoluble matter in each.

One hundred grains of each extract were next treated with 4 fluidounces of boiling distilled water, macerated for four days, filtered and the insoluble portion dried and weighed.

As the quality of krameria depends upon the tannin present, it was determined by the gelatin test. One drachm of the finest gelatin was dissolved in 4 ounces of hot distilled water, and 15 grains of powdered alum added. By experimenting, I found that 31 drops[1] of this gelatin solution would precipitate 1 grain of tannic acid. The requisite quantity of the gelatin solution was added to the cold solutions of the extracts, with the results as shown in the table. The hot solutions were tested for tannin in like manner, and found to yield a small percentage more than the cold, although equally as varied.

From the results obtained it is evident that manufacturers have very different ways of making the extracts of krameria, and very few, if any, adhere strictly to the formula of the U. S. P., although the officinal formula yields a stronger and much more soluble extract.

After experimenting with hot and cold water, alcohol and a mixture of alcohol, water and glycerin, the most satisfactory results were obtained by the following formula:

Take of	Krameria, in moderately fine powder, .	16 troyounces
	Glycerin, . . .	½ troyounce
	Distilled water, . .	a sufficient quantity

Moisten the powder with 5 fluidounces of the distilled water, previously mixed with the glycerin. Pack it firmly in a conical glass percolator, and allow it to macerate for 48 hours; then gradually pour distilled water upon it until the drug is exhausted; then evaporate the percolate by means of a water-bath, at a temperature between 150° and 170°F., to the consistency of an extract.

The extract, weighing 9 per cent. of the powdered root, is completely soluble in cold and hot water, and indicates 31 per cent. of tannin.

The following table shows the amount of insoluble matter in some commercial extracts of krameria, also the quantity of tannin:

100 *grains Commercial Extract of Krameria contain,*

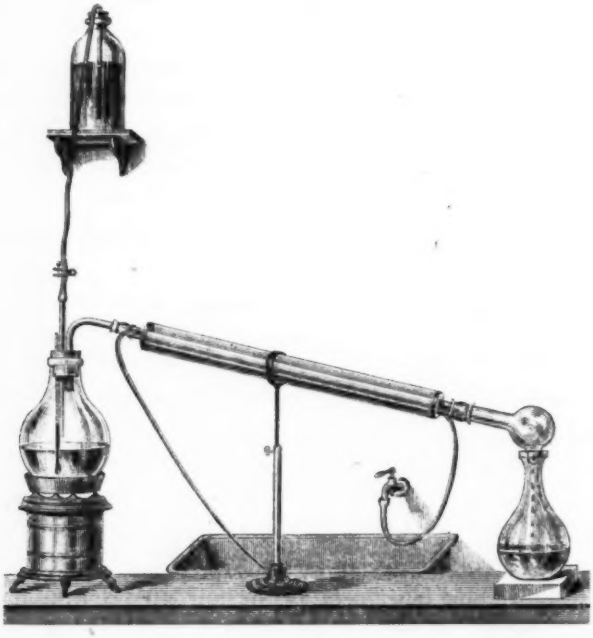
	Number of grs. insoluble matter in cold distilled water.	Number of grs. insoluble matter in hot distilled water.	Am't of tannin, grs
A	24	21½	18½
B	43	37	16½
C	59½	53	10½
D	67½	63	8
E	76½	71½	7
F	81	74½	6½
G	88	84½	5½
H	86	81½	4½

[1] Drops are a very unsatisfactory measure for quantitative determinations.—Ed.

APPARATUS FOR PREPARING ETHYL BROMIDE.

By Joseph P. Remington.

The accompanying cut represents the apparatus used in preparing ethyl bromide (see page 248, May number of this journal). It consists of a four-liter flask, connected by a bent glass tube with a condenser. The cork is perforated to accommodate a thermometer and a small glass tube for the introduction of the alcohol.



The diluted sulphuric acid is introduced, the potassium bromide added, and, after making the connections tight, heat is applied until the contents of the flask show the temperature of 116°C. The alcohol, contained in a bottle, is elevated above the flask, and, by means of a siphon tube and pinchcock, is slowly fed into the flask, care being taken to adjust the flow of liquid and the heat so that the temperature range between 100° and 116°C. The advantage of this process is that the decomposition takes place at a temperature that can be controlled with ease, and the formation of ethyl bromide goes on regularly and without danger or risk. This apparatus may doubtless be serviceable for making other ethyl compounds.

AN IMPROVED FORMULA FOR CHLORODYNE.

By R. De Puy.

The formula for preparing chlorodyne, adopted by the American Pharmaceutical Association, yields a very unpharmaceutical mixture, and, when tried, has failed to give satisfaction. The formula which I have been using for the last two years has given entire satisfaction, and, if the ext. liquorice be of good quality, does not separate. It is as follows:

Purified chloroform,	4 fl. oz.
Stronger ether,	1 fl. oz.
" alcohol,	4 fl. oz.
Molasses,	4 fl. oz.
Ext. liquorice, B. P.,	2½ troy oz.
Morphia hydrochlorate,	8 grains.
Oil peppermint,	16 minims.
Glycerin,	17½ fl. oz.
Acid hydrocyanic, 2 per cent.,	2 fl. oz.

Dissolve the morphia and oil peppermint in the alcohol, and mix the chloroform and ether with this solution. Mix the ext. liquorice with the molasses by applying a gentle heat, let cool, and to this add the glycerin. Shake these two mixtures together, and lastly add the hydrocyanic acid, and again shake well. This is the American Pharmaceutical Association formula, having glycerin substituted for syrup, which I consider in every way an improvement.

—*Canad. Pharm. Journ.*, May, 1880.

PHARMACEUTICAL NOTES.

By Robert F. Fairthorne, Ph.G.

An Expeditious Method for Making Mercurial Ointment.—Many suggestions have been made for overcoming the difficulty experienced in the manufacture of mercurial ointment of the officinal strength of the U. S. Pharmacopœia. Some of the plans proposed are decidedly objectionable, such, for instance, as the introduction of turpentine or sulphur, also the addition of old and rancid ointment, or exposure of the ointment until rancidity occurs, so that it becomes a desideratum with the trade that some practical and unobjectionable means should be adopted whereby labor would be saved and an ointment made that would be bland and non-irritant in character. Such a method I have now to propose, which, doubtless, will give others the

same satisfaction as it does me, enabling them to accomplish in ten minutes what required an hour or two by the older process. This is accomplished by the addition of mercury and chalk (gray powder) in small portions at a time to the suet and lard, and proceeding in the same manner as directed in the Pharmacopœia. The weight of the mercury contained in the gray powder used is estimated and deducted from the amount ordered in the formula, so as to make an ointment containing 50 per cent. of that metal.

The following will be found to produce such a result, namely:

R	Mercury,	22 troyounces		
	Mercury and chalk,	5	"	2 drachms and 2 scruples
	Suet,	9	"	
	Lard,	11	"	5 drachms and 1 scruple
	M.			

Rub the mercury and 2 ounces of suet and a small portion of the lard together with an ounce of the gray powder until the globules become invisible; then add the remainder of the ingredients in successive portions, the suet having been softened by heat.

The above named quantity of mercury and chalk contains 2 troyounces of the metal and 3 ounces, 2 drachms and 2 scruples of chalk. This, therefore, renders it necessary to alter the proportions of suet and lard, so as to preserve the same consistence as the officinal preparation.

By adding the above ingredients together they will be found to weigh 48 troyounces, and will contain 24 troyounces of mercury. I do not think that the addition of the prepared chalk contained in the gray powder can be objected to for the purposes for which the ointment is used. It is certainly less objectionable than the addition of rancid or irritating substances.

How to keep Citrine Ointment from Changing.—Most druggists have experienced the difficulty of keeping citrine ointment so as to be able to dispense it in a manner satisfactory to themselves and to their customers, even a few weeks after being made, on account of change in color from the bright lemon yellow to a rusty brown, and from its becoming granular and friable by age. I have found that these difficulties can be overcome by allowing the freshly made ointment to be covered by a stratum of glycerin about $\frac{1}{3}$ of an inch deep, so that none of it should be exposed to the air. By this means I have preserved citrine ointment without change for more than a year, and I think it probable that it would remain unchanged for an indefinite period of

time. I think, too, that by this plan many other ointments and cerates could be kept. I shall try it with Goulard's cerate.

A Close Imitation of Curacoa Cordial.—I have devised the following and found it a very good substitute for the imported curacoa:

R	Fresh oil of orange peel,	10 drops
	" " lemon peel,	6 "
	Oil of aniseed,	1 "
	" cloves,	1 "
	" cinnamon (Ceylon),	1 "
	Alcohol,	5 fluidounces and 2 drachms
	Simple syrup,	7 "
	Orange flower water,	2 fluidrachms
	Extract of fresh orange peel,	1 "
	Water,	2 fluidounces 2 "

Dissolve the oils in the alcohol, add the extract of orange peel, then the syrup, agitate for 10 or 15 minutes, and after the water is poured into the mixture shake well. After standing for an hour filter, after having previously mixed the cordial with 2 drachms of carbonate of magnesia in powder.

This produces a fine flavoring cordial, having a close resemblance to the genuine curacoa, and miscible with water without becoming turbid. This makes the white curacoa, and in order to make the colored all that is necessary is to add sufficient caramel to produce the desired tint.

EFFECT OF INTENSE COLD ON CHERRY-LAUREL.

By Professor Flückiger.

In January, 1879, I submitted cherry laurel leaves, which were covered with ice, to distillation with water, and ascertained that they nevertheless yielded a small amount both of essential oil and hydrocyanic acid. This experiment is recorded in the new edition of the "Pharmacographia," page 256, yet it should be added that the leaves, although frozen, were still green and were not killed by the frost, the temperature being not below —10°C. (14°F.). In the month of December, 1879, as well as in the beginning of the present year, however, we noticed repeatedly, at Strassburg, temperatures of —25°C. (—13°F.), and then the cherry-laurel leaves turned brownish, lost their leathery texture and were in fact killed. Some of them, distilled with water, yielded an aromatic aqueous product which proved devoid of hydrocyanic acid. On repeating this experiment with one pound of the frozen leaves the same negative result was obtained, and the same again when two pounds of leaves were submitted to distillation. In

each case the first portions of the distilled liquid were tried for hydrocyanic acid with the usual tests, viz., sulphate of copper and guaiac, the production of sulphocyanate and that of Prussian blue. No trace of hydrocyanic acid was proved to be present by these means. Another distillation, like the former, also performed by using the leaves minutely cut, was carried on for an hour or two, so as to afford a large quantity of water, say about 1½ gallon. It had nearly the usual odor of cherry-laurel water, yet no essential oil made its appearance. The whole quantity of the distilled water was now repeatedly shaken with ether; from the ethereal layers afterwards the ether was cautiously distilled off and the residue exposed to spontaneous evaporation at a temperature not exceeding 20°C. (68°F.). It afforded about 1½ gram of an oily liquid reminding, not exactly of cherry-laurel oil, but a little suggestive of acetic or similar compound ethers, and displaying at the same time a certain pungency; it was of a decidedly acid reaction. Supposing it to be (impure) cherry-laurel oil, I thought it quite in accordance that small crystals began to be formed on the sides of the phial. To investigate the nature of the essential oil I shook it with a saturated solution of bisulphite of potassium, SO_3KH, after having ascertained that this solution immediately combined with true benzylic aldehyd, *i. e.*, essential oil of laurocerasus, yielding crystallized scales of the compound $C_6H_5.COH,SO_3KH$. But such was by no means the case with the oily liquid which had been extracted from the water. And as to the small crystals which had separated from the same oily liquid, they proved not to be benzoic acid inasmuch as they readily melted at about 60°C. (140°F.). Nor was it possible to ascertain the cause of the acid reaction of the oily liquid; it was due neither to formic acid nor to any other acid of the fatty series. The aqueous residue in the still was duly concentrated and found to be very rich in mucilage and uncrystallizable sugar.

These experiments, which were for the most part performed by Mr. Fels, a pupil of mine, show that the source of hydrocyanic acid and benzylic aldehyd in the laurel leaves is destroyed by intense cold. A minute quantity of an essential oil is still afforded by the leaves, but it does not agree with the oil as yielded by the living plant. Dried leaves are sometimes said likewise to yield no longer any hydrocyanic acid; I am not able to confirm this statement, having ascertained that fresh cherry-laurel leaves, which I dried for several days at the temperature

of the water-bath, on distilling them with water afforded a small amount of the said acid.

I am informed that in December and January past *Prunus laurocerasus* has been injured throughout northern Italy as far as Bologna and Florence in the same way as with us. It would be interesting to know a little more exactly the area of this action of cold on the shrub, which is so widely spread also in the south of the British Isles.—*Pharm. Jour. and Trans.*, March 20, p. 749.

CONTRIBUTIONS TO THE CHEMISTRY OF SEVERAL VARIETIES OF WAX.

By Eduard Hirschsohn, Mag. Pharm.

The reactions I obtained with the different resins, etc., described in the "Archiv der Pharmacie," can be made use of as a good means not only of distinguishing the various resins, gum resins, and balsams from one another, but also of recognizing the more important commercial varieties of the same by means of chemical reactions. It did not, therefore, appear without interest to subject the varieties of wax more commonly met with in the market to a similar examination.

For this purpose I made use of the samples in the collection of the Pharmaceutical Institute of this town, kindly placed at my disposal by Professor Dragendorff, to whom I take this opportunity of expressing my sincere thanks. The experiments with the same described in the following lines were carried out, with but few exceptions, in precisely the same way and with the same reagents as in my previous investigations.

I was able to avail myself of the following samples:

1. *Cera flava;* from a chemist in Dorpat; fine pure sample.
2. *Cera flava;* produced in 1877 in Rappin in Livonia. Also a very fine sample.
3. *Cera alba;* in the collection of the Pharmaceutical Institute; fine white pieces.
4. *Cera alba;* from a chemist in Dorpat; good sample.
5. *Cera alba;* from the Martiny collection; similar to No. 4.
6. *Cera africana;* also from the Martiny collection; very similar to European beeswax, but softer and of a greyish yellow.
7. *Cera mexicana;* from the Martiny collection; is a white beeswax.

8. *Cera de Orizaba;* also from the Martiny collection, where the following note is appended to it:

"Received from Schaffner, with the remark that it was in this state offered for sale by the Indians. I have not investigated it more closely, but after a superficial examination I take it for a vegetable wax."

The examination shows it to be a Myrica wax.

9. *Cera japonica;* in the collection of the Pharmaceutical Institute; usual commercial variety.

10. *Cera japonica*; from the Martiny collection; similar to No. 9.

11. *Cera from Myrica quercifolia;* also from the Martiny collection; a pale green mass, tolerably hard and easily powdered.

12. *Cera from Myrica cerifera;* from the Martiny collection; somewhat darker and more brittle than the foregoing sample.

13. *Cera from Myrica?* (species not named); from the Martiny collection; similar to No. 12. May be distinguished from No. 11 only by its darker green color.

14. *Cera de Bahia;* also from the Martiny collection; very hard grey mass, the freshly fractured surface greenish.

15. *Cera Brasiliensis;* from the Martiny collection; light yellowish mass, brittle and easily powdered.

16. *Cera e Lac in baculis;* also from the Martiny collection; chocolate-brown brittle mass, easily powdered.

17. *Carnauba wax;* obtained in 1878 from Gehe & Co., in Dresden; similar to No. 15.

Alcohol (95 *per cent.*), in the proportion of 1 part of wax to 10 of alcohol, dissolved only a small portion of the samples under examination. On warming to the boiling point, sample No. 8 and 11 to 13 were completely dissolved, whilst with samples 1 to 7 and 9 and 10[1] the greates patt of the wax melted and collected in the form of an oil at the bottom of the test tube. With No. 14 to 17 on the other hand the undissolved portion remained as a powder. Part of the dissolved wax separated out of the hot solutions on cooling, colorless.

Alcoholic solution of acetate of lead gave with the above cooled alcoholic solutions of samples No. 1 to 13 and 16 a cloudiness which on heating to boiling completely disappeared in Nos. 1, 2 and 6 to 13, in Nos. 3 to 5 and 16 partially only. In Nos. 14, 15 and 17 no change was caused by the addition of the acetate of lead solution.

[1] Japanese wax dissolved completely on boiling with a larger quantity of alcohol.

Solution of ferric chloride (1 part in 10 of 95 per cent. alcohol) added to the alcoholic solution of the wax colored No. 13 black, with the others it produced either no alteration or a brownish or greenish tint. In No. 11 a cloudiness was produced, insoluble on warming.

Solution of ammonia (sp. gr. 0·96, gave with the alcoholic solutions a more or less opalescent mixture.

Ether, at the ordinary temperature, dissolved Nos. 8 and 11 to 13 completely, the remainder partially only. Of these Nos. 1 to 7 and 9 and 10 were completely dissolved on boiling and, as with the hot alcoholic solutions, the greater part separated out on cooling, colorless. The addition of an equal volume of 95 per cent. alcohol to the ethereal solutions, obtained at the usual temperature, produced no alteration in Nos. 8, 11 to 14 and 16, whilst in Nos. 1 to 7, 9, 10, 15 and 17 a cloudiness appeared.

Chloroform dissolved at the ordinary temperature, samples Nos. 1 to 13 to a perfectly clear solution ; Nos. 14 to 17 were only partially dissolved, but on heating dissolved completely, the greater part separating out colorless on cooling.

Petroleum spirit at the ordinary temperature effected only a partial solution which on boiling became complete. On cooling the wax separated out colorless.

Alcoholic solution of caustic potash (1 part caustic potash in 10 parts 95 per cent. alcohol) on only slightly warming dissolved the Japanese and Myrica wax (Nos. 8 to 13) completely, and the remainder (Nos. 1 to 7, 14 to 17) required to be boiled for some time before solution could be effected. On heating the cooled soap solutions with about 100 parts of water, the soaps from Japanese and Myrica wax dissolved completely, the other soaps only partially.

Quantitative experiments also were made with some of the samples as follows: The wax was brought to the finest possible powder with powdered glass and treated with alcohol or petroleum spirit at the ordinary temperature, as long as anything was removed by the solvent. From the solutions thus abtained, the alcohol or petroleum spirit was recovered by distillation, and the residue dried at 110°C.

The following figures were obtained:

	Alcohol, 95 per cent.	Petroleum spirit.
Cera africana,	3·50	49·28
Cera de Orizaba,	10·22	
Cera japonica,	14·00	69·80
Cera Myrica quercifolia,	16·16	53·62
Cera Myrica cerifera,	7·16	41·62
Cera Myrica,	19·88	68·70
Cera Bahia,[1]	9·70	3·32
Cera braziliensis,	3·25	5·04

The quantitative experiments show that, with the exception of Bahia wax, the solubility in petroleum spirit is much greater than in alcohol.

From the quantitative results it is evident that the behavior of the samples of wax under examination with chloroform renders admission into two groups possible, viz., such as are completely soluble in that medium, as the Myrica and beeswax, and such as are only partially dissolved by it, as Brazilian and Bahia wax. Further, their comportment to ether allows of a similar division, and here the Myrica wax alone is completely dissolved, beeswax and Bahia wax on the other hand only partially. The effect produced by the addition of acetate of lead solution to the alcoholic solutions can also be made use of, as a means of distinguishing the various varieties of wax, since Brazilian and Bahia wax are not rendered turbid, whilst the contrary is the case with all the other samples, in some of which the cloudiness disappears on warming, in others it does not.

These peculiarities allow of the several varieties of wax being well distinguished from one another, and the following scheme will, I think, be found to answer that purpose.

A sample of the wax to be examined is heated with ten times as much chloroform to boiling, and, when completely dissolved, cooled in cold water.

I. The chloroformic solution remains clear after cooling.

A. Ether dissolves completely.

(*a*) Alcoholic solution of ferric chloride gives with the alcoholic solution of the wax a precipitate insoluble on heating.

Wax from Myrica quercifolia.

(*b*) Ferric chloride colors the alcoholic solution black.

Wax from an undetermined species of Myrica.

(*c*) Ferric chloride colors brownish but gives no precipitate.

Wax from Myrica cerifera. Wax from Orizaba.

[1] Ether dissolved 10·52 per cent. of this sample.

B. Ether dissolves only a part—

A sample is boiled with ten times the quantity of alcoholic potash solution till saponified and the soap heated with 100 volumes of water.

(*a*) The soap is completely soluble.

Japanese wax.

(*b*) The soap is partially soluble.

Beeswax; African beeswax.

II. The chloroformic solution becomes cloudy on cooling.

A. Alcoholic solution of acetate of lead gives no cloudiness.

(*a*) The ethereal solution of the wax becomes cloudy on the addition of an equal volume of alcohol.

Brazilian and Carnauba wax.

(*b*) The ethereal solution remains clear.

Bahia wax.

—*Pharm. Jour. and Trans.*, March 20, p. 749.

Origin of the CALISAYA LEDGERIANA of COMMERCE.

By John Eliot Howard, F. R. S.

I have been induced to review the question of the origin of the now celebrated bark above named, and am able to publish for the first time details which, at the request of Mr. Ledger, I withheld in 1876, when I gave extracts from his letters in my "Quinology of the East Indian Plantations."

We are indebted not to systematic botanists, but to the experience and practical sagacity of an Indian, for our knowledge of the best kinds of calisaya bark; whilst to Mr. C. Ledger belongs the whole credit of the enterprise of obtaining the precious seed to which the hope of future success attaches in Java and perhaps in other parts of the East Indies.

I have pleasure in *now* recording the name of the above-mentioned Indian servant of Mr. Ledger—Manuel Incra Mamani—to whom was entrusted in 1861 the commission of obtaining the seed of the best calisaya. At page 48 of my (unfortunately) little accessible "Quinology of the East Indian Plantations" will be found many details, but I now quote more fully from Mr. Ledger's original letters. Under date December 22, 1874, I find the following:

"Manuel Incra Mamani delivered the seed he had collected in June, 1865. He then told me that the best bark trees had not produced ripe seed for four years previously. When the trees were full of flower and most promising a frost (*helada*) in April destroyed it all. The inferior

sorts had not suffered. He had been cutting bark with his sons and patiently waited for opportunity for complying with my orders, obtaining only the best sort.

"He assured me, too, he had seen several parties collecting seed for gentlemen in La Paz; that they did not obtain a single good seed till 1865; and this assertion seems now to be corroborated by result of Schuhkraft's remittances in those years. (See further).

"After paying him well, he returned to his home in Bolivia, having engaged with me before leaving to obtain more seeds of the Rojo, the Morada, the Naranjada, the calisaya of Moco moco."

The sequel is a sad one. After relating the particulars of the murder of another servant (Babrera), Mr. Ledger says:

"Poor Manuel is dead also; he was put in prison by the Corregidor of Coroico, beaten so as to make him confess who the seed found on him was for; after being confined in prison for some twenty days, beaten and half starved, he was set at liberty, robbed of his donkeys, blankets and everything he had, dying very soon after."

The first portion of the above seed passed into the hands of the Dutch Government. In my work the reader will find particulars about the reception in Java. Owing to Mr. Ledger's good drying and care, the seed arrived in such condition that it had not lost its germinative power. I inspected the remainder at the request of the British purchasers, and found it apparently of the best quality and condition. The capsules reminded me of those of "*Cinchona calisaya*, var. *microcarpa*, Wedd.," published by Dr. Weddell in the "Annales des Sciences Naturelles," 1870. This I recognize as the source of the Zamba sort, of which I have magnificent specimens. Dr. Weddell says: "Les cascarilleros du pays me l'ont signalée comme donnant une écorce supérieure en qualité a celles des autres varietiés croissant dans les mêmes lieux, et j'avoue que j'ai été heureux de voîr cette appréciation de l'homme des bois confirmée par M. Howard."

In fact it is only in this description that Dr. Weddell approached the best sorts, the *Calisaya vera* being by no means equal in produce.

In his second journey Dr. Weddell obtained specimens of the Zambita, Verde and Morada varieties of calisaya, of which he obligingly gave me specimens, which are now before me. The bark of these sorts, especially the Zambita and the Morada, resembles considerably that of the Ledgeriana.

I do not assert entire identity. The seed producing the Ledgeriana

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was gathered, according to Manuel, from about fifty trees, chiefly of the Rojo sort. These different forms of the best calisaya are distinguished by the carcarilleros by the color of the leaves; and Ledger thinks my plate of the *Calisaya anglica* resembles in the color of the leaf that of the Rojo. Elsewhere he gives me, as descriptive of the same, that of *sangre de toro*, or bull's blood. The variation in the color and form of the leaves does not seem to have any connection with the value of the bark.

I have said that Dr. Weddell published the Zamba or Zambita sort as the var. *microcarpa*, but not having seen the flowers, his description leaves much to be desired. The *Calisaya Ledgeriana* of Java is, as I have shown, the legitimate produce of the seed of the fifty trees above mentioned. I should think that no botanist has been within some hundred miles of the almost inaccessible banks of the Mamore, where these were met with, or of the Beni, where Pedro Rada collected from trees (as he told me), from 120 to 150 feet in height, some of the finest calisaya bark ever brought into the English market; conveying his precious cargo by the long and perilous navigation of the Rio Madeira, as I described in Seemann's "Journal of Botany" in 1869. This sort was called Morada; and if the colored drawing given there is compared with my plate V in "Quinology of the East Indian Plantations," it will be found closely to resemble.

We have then no means of further botanical description, except from Java; and from thence I have been supplied with forty-four excellent specimens, comprising all the barks cultivated. These I fully described in the work above named, and from these published the first description of the sort as "*Cinchona calisaya*, var. *Ledgeriana*, How." The Ledgeriana has a peculiar character, to be recognized in the seedlings at a very early stage, but variable as to form and color in the after-growth. It must be admitted that the most striking characteristic of the Ledgeriana is the bark, which is at once recognizable by a person familiar with these observations; but scarcely capable of being made the basis of botanical definition. The flowers are also described as small, white and "nutantes;" but I am not certain that this is capable of being asserted without some slight modification. I hope to succeed in flowering my own specimens, which I would then describe more perfectly. On the whole I have found it best to present to the reader of my book three forms of the plants, relatively (according to the analysis of the flower) the *male*, *female* and *neuter* forms—that is those in

which the above elements preponderate, or are in even balance. The male (*macho*) plants in the cinchonæ are always the most highly colored.

The male, or *macho* form (plate IV), is the most colored (and should be more of the *bull's blood* color). The contents of this bark, as given from the tree itself by Moens are (per cent.):

Quinia,	9·06
Cinchonia,	0·10
Amorphous alkaloid,	1·40
Total,	10·56

The female form (*hembra*), plate V, has leaves of a green color, and gave to the same chemist:

Quinia,	9·90
Amorphous alkaloid,	2·09
Total,	11·99

(Of this I have given a fine plant to one of our Ceylon cultivators, who is about sending it out to India.)

The third form, plate VI, gave:

Quinia,	9·97
Amorphous alkaloid,	1·70
Total,	11·67

Compare these with "*Calisaya Javanica*," of Hasskarl, which gave (in average of 18 samples, 1879, Moens):

Quinia,	0·70
Cinchonidia,	0·50
Quinidia,	0·30
Cinchonia,	1·20
Amorphous alkaloid,	0·30
Total,	3·00

and the "*Calisaya Javanica*," of Schuhkraft (average of sixteen samples, 1879, Moens):

Quinia,	0·50
Cinchonidia,	0·30
Quinidia,	0·20
Cinchonia,	1·20
Amorphous alkaloid,	0·20
Total,	2·40

It must be well understood that none of these sorts originated in Java, but were and are well distinguished as "best" and "inferior" in their native country.

The idea of any of them originating by *crossing* in the Java plantations is therefore perfectly illusory.

If asked how they originated in their native forests, the answer must be, that of this we are enitrely ignorant. We approach the question so well investigated by Alexis Jordan as to the varied forms of European flowers. Although I have described the *Ledgeriana* as a *variety* of the *Calisaya vera*, it is only as conforming to the present state of botanical science that I use the word. It is as consistent with common sense to believe that by fusing together a half-crown and a penny one could produce a sovereign, as to believe that by blending inferior varieties one could educe the *Calisaya Ledgeriana*, the best, by far, of all. I do not at all deny that hybridization takes place in the plantations in India, nor that in some cases good results may follow. The only practical inquiry into this question was carried on by McIvor, who thought he had attained a great success in a *pubescent* hybrid, from which he sent me some good bark; but when afterwards, with much pains and care, he was good enough to send me a section of the tree, it was quite different, and a correspondent of mine in the Wynaad informs me that, as sent to him, it is altogether a failure. Specimens both of the good bark and of the tree may be found in the Museum.

If my readers will take a map of South America, they will find the distance from Coroico (Calisaya district) to Huanuco (grey bark) is 680 miles; from Huanuco to Loxa (crown bark) is 500 miles; from Loxa to Riobamba (red bark) is 180 miles; from Coroico (Calisaya) to Pasto (Pitayo bark) is 1,400 miles; and from Coroico to the Lancifolia and Cordifolia district is 1,500 miles. We need not, then, suspect any interference of the pollen at these distances. In fact, all that we can recognize is the existence of permanent allied forms; and the difficulties are insuparable, even in imagination, in conceiving how they could have diverged from one centre. It is like the attempt to find a common centre for several intersecting circles.

It is no doubt very inconvenient to the systematic botanist to admit this; but to distort facts and suppress all that we have already gained in knowledge of *nature* for the sake of *system* is simply absurd.

The *Calisaya Ledgeriana* is, then, the legitimate descendant of the finest sort (or sorts) of the Bolivian forests; subsisting even there

under different forms, especially distinguished by the color of the leaves, but agreeing in the production of a large amount of very pure quinia. The flowers appear in South America to be very sensitive to frost, but they are abundantly fertile under favorable circumstances; 20,000 plants were raised by Van Gorkom and 60,000 by McIvor from the one bag above described. The climate at Ootacamund did not suit. Nevertheless, some of the trees, though stunted and mostly perishing, have produced excellent bark. The reason why it is not more largely sent into Europe is, I understand, that in Java they are wisely thinning out the inferior trees and allowing the best to develop themselves. In British India, on the contrary, I am afraid many of the best "succirubra" and "officinalis" trees are being cut down. I thus send for the information of your readers a few facts which may be of interest, and in conclusion must express my regret that those who have toiled and suffered in introducing these valuable trees into India should have been so ill rewarded. Ledger lost his time and his servants, and yet both the British and Dutch governments refuse him the slightest compensation for his losses.—*Pharm. Jour. and Trans.* [Lond.], March 13, 1880.

NOTE ON CANTHARIDES.[1]

By Henry G. Greenish.

In the autumn of last year, a sample of cantharides was handed to Professor Dragendorff, of the Pharmaceutical Institute, by a chemist of this town, with the remark that he had not succeeded in preparing an active Drouott's plaster from the flies, and doubted, therefore, their good quality.

I willingly acceded to Professor Dragendorff's request to determine quantitatively the amount of cantharides in the sample, and, in doing so, followed the method indicated by him in "Die chemische Werthbestimmung einiger starkwirkender Droguen,"[2] which is briefly as follows:

25 to 30 grams of the powdered flies are freed from oil by treatment with petroleum ether. Cantharidin, being not insoluble in petroleum ether, a correction must be made in the amount of cantharidin found to compensate for the loss incurred by treatment with this solvent.

[1] Read at an evening meeting of the Pharmaceutical Society of Great Britain, March 3, 1880.

[2] St. Petersburg, 1874.

This loss has been determined by Dragendorff to be for 100 cc. petroleum ether 0·0108 gram cantharidin.

The flies, freed from oil, are now thoroughly moistened with solution of soda, and the mass thus produced dried in a porcelain dish on the water bath. By this treatment, during which quantities of ammonia gas are evolved, a soluble cantharidate of soda is formed, which is subsequently decomposed by hydrochloric acid. It must be borne in mind that not all the cantharidin in the flies is present in the free state. Dragendorff has already shown[1] that cantharides containing about 0·3 per cent. cantharidin yielded only half that quantity to boiling water, the remainder being extracted by solution of potash. Among the combinations of cantharidin insoluble in water occur probably salts of lime and magnesia; among the soluble, cantharidic acid, possibly cantharidate of ammonia, etc. (the ammonia being derived from the albuminous substances by their decomposition during the drying of the flies).

The dried mass (containing now cantharidate of soda) is removed from the dish and finely powdered. It is then transferred to a flask, 25 to 30 grams of chloroform added, and the whole rendered strongly acid by the addition of dilute hydrochloric acid. This is then well shaken with from 25 to 30 grams of pure ether, the ether-chloroform solution separated and shaken with distilled water. The shaking with ether is repeated until cantharidin ceases to pass into solution. The major part of the ether can be recovered by distillation, the residue being allowed to evaporate to dryness in a flat-bottomed glass dish. This residue is then transferred with the aid of a small quantity of absolute alcohol to a tared filter, and washed first with alcohol and then with two or three cubic centimeters of water. Should traces of oil still adhere to the cantharidin they may be removed by washing with petroleum ether. The quantities of these liquids used must be noted, since a slight correction has to be made, viz.: for 10 cc. alcohol 0·0077 gram; for 1 cc. water 0·0005 gram. The washed cantharidin is dried at 100°C., weighed and the corrections for petroleum ether, alcohol and water added to the figure so found.

Proceeding in this way 31·1405 grams of the flies in question yielded me 0·2022 gram of nearly white cantharidin. The corrections for petroleum ether, alcohol and water amounted to 0·0303 gram, total cantharidin 0·2325 gram, equivalent to 0·746 per cent. This is

[1] "Pharmacist," v. 78; "Pharm. Jour." [3], ii. 1029.

largely in excess of the amount of cantharidin found by Dragendorff in good samples of Spanish flies, viz.: 0·351 to 0·5 per cent., and serves to illustrate in a striking manner the remarks on cantharides by that chemist, published in the "Pharmacist:"[1]

"Apothecaries frequently complain that some cantharides do not furnish an active blistering plaster; that the same furnish, even when treated with acetic ether, an extract so poor in cantharidin that with its aid no good Drouott's blistering tissue can be produced. In most cases the opinion is expressed that the flies contain too small a percentage of cantharidin. My experience teaches me to discredit the latter opinion. It is possible to obtain good preparations even from such apparently poor cantharides, it being only necessary to thoroughly extract the cantharidin they contain. . . . I would say that by the aid of soda or potassa the entire amount of cantharidin contained in the flies may be rendered active. The finely powdered flies are mixed to a paste with diluted alkaline lye of about 1·1 sp. gr., heated in the water bath for twenty-five to thirty minutes, when sufficient muriatic acid is added to have a trifling surplus of the same, and the whole mass is dried radidly in the water bath. The residue, which we may call prepared cantharides, is powdered anew, and employed for the preparation of the plaster, or for the extract with acetic ether for use upon tissue."

Had the Spanish flies examined been subjected to this treatment with solution of soda and hydrochloric acid, they would have yielded a blistering plaster of the activity of which there would have been no doubt.

I am able to give a further proof of the very imperfect nature of the exhaustion of the flies by ether in the estimation of cantharidin in the residue after treatment with that menstruum. Forty pounds of such residues were sent to Professor Dragendorff by a house in St. Petersburg engaged in the manufacture of large quantities of Drouott's plaster. The treatment of a kilogram had yielded such an unexpectedly large quantity of cantharidin as to offer an inducement to estimate the same more exactly.

29·297 grams of the exhausted flies, finely powdered, yielded me 0·2218 gram of nearly pure cantharidin; correction for alcohol aud water 0·0192 (the flies having been previously exhausted with ether no correction for petroleum ether was necessary); total amount 0·2410 gram, equivalent to 0·822 per cent. of cantharidin.

[1] Loc. cit., p. 79.

The average quantity of oil removed by ether being about 12 per cent., we may reckon the amount of cantharidin in the original flies not extracted by ether to be 0·723 per cent., and assuming the cantharides to have been equally rich in cantharidin with the first sample the amount of that principle extracted by ether would amount to only 0·023 per cent.

Manufacturing druggists would do well, therefore, to turn their attention to their cantharides residues, especially such as have been extracted with simple solvents (ether, alcohol, etc.), in which salts of cantharidin are insoluble. The marc, for instance, from tinct. cantharidis still contains a considerable proportion of cantharidin. The only English price list at my disposal, that of Messrs. Southall Brothers, quotes cantharidin at 1s. per grain, and leaves no doubt of the profitability of working up residues containing ¾ per cent. of that principle.

That other species of *cantharis* may excel *cantharis vesicatoria* with regard to the amount of cantharidin contained in them is shown by the estimation of a sample of *cantharis adspersa* presented to the museum of the Pharmaceutical Institute by Professor Arata, of Buenos Ayres. Although the flies arrived mouldy and in bad condition I succeeded in obtaining from 12·3195 grams of dry insects 0·2917 of very nearly pure white cantharidin; correction 0·0256; together 0·3173 gram; equivalent to the very large amount of 2·573 per cent. Noticeable in this sample and in the first sample of *cantharis vesicatoria* is the comparatively small quantity of fixed oil. While Dragendorff finds as an average in good cantharides 12 per cent., I have obtained from *cantharis vesicatoria* (approximately) 7·7 per cent., and *cantharis adspersa* only 2·6 per cent. Possibly the weather prevalent during the life of the insect, the age of the same, etc., may have an influence on the amount of oil and cantharidin.—*Pharm. Jour. and Trans.*, March, 13, 1880.

ETHEREAL OIL OF CALIFORNIA BAY TREE.

By J. M. Stillman.

The California bay tree, known under the different botanical names of *Oreodaphne Californica*, *Laurus Californica*, *Tetranthera*, and latterly *Umbellaria Californica*, is a large and beautiful evergreen tree, very common to the valleys and water-courses of the coast mountains of California. It often attains great size, and its timber is much used under the name of "California laurel" for veneering and fine cabinet

work. The leaf is in shape something like the laurel, but lighter in color and narrower. Both leaf and wood have a very fragrant aromatic odor, which, when strong, as in the crushed leaf, excites the mucous surfaces, brings tears to the eyes and produces headache.

The oil was obtained by distilling the leaves (which were gathered in March, 1879, when the trees were in bloom) with steam. In the neighborhood of sixty or seventy pounds of the fresh leaves were placed in a large barrel with perforated false bottom, and steam from the escape pipe of a steam boiler forced through the mass and condensed. In order to avoid the accumulation of too large an amount of water, this was siphoned off from the bottom of the receiving bottle, the siphon dipping into a dish of water by the side of the bottle, and the overflow of this dish kept the water in the bottle at a constant level. At the end of two days there were obtained in this way 820 grams of the oil. The oil as thus obtained is of a clear yellowish or straw color, of the peculiar aromatic odor of the leaf, specific gravity at 11° C. 0·94. By long standing (nearly a year) it does not thicken.

Subjected to fractional distillation it gives up a small quantity of dissolved water, and separates into two principal fractions, one boiling from 170 to 190°C. and the other from 210 to 225°, with smaller quantities passing over as high as 260°.

The lower fraction mentioned was subjected to repeated fractional distillation, and gave a considerable quantity of a clear, colorless, mobile liquid boiling at 167 to 168°, though apparently with slight dissociation, as traces of water appeared in the first portions of the distillate at each distillation, which were not to be got rid of by repeated distillation and removing the first portions of each distillate. A portion of the purest of this substance from 167 to 168°C. was subjected to elementary analysis:

	I.	II.	Mean.	Calculated for $C_{20}H_{32}H_2O$.
C ...	82·91	82·46	82·68	82·76
H ...	11·93	11·68	11·80	11·72

It will be seen that the agreement is very close with the composition of a hydrate of turpentine in which one molecule of water is combined with two of $C_{10}H_{16}$ or one of $C_{20}H_{32}$.

This agrees with the terpinol of Wiggers, investigated and named by List, and obtained in various ways from the turpentine dihydrate $C_{10}H_{16}.2H_2O$. The boiling point of terpinol is given at 168°, and it is a colorless liquid of pleasant aromatic odor. The odor of the com-

pound analyzed is not unlike that of spirits of camphor, though not quite identical.

It is not readily affected by metallic sodium, even when heated with it. The water is therefore in intimate combination, possibly as an ether $(C_{10}H_{17})_2O$.

A vapor density determination was made by Mr. J. B. Wilcutt according to Victor Meyer's method, in diphenylamine vapor. The result in one case gave 4·7, whereas the vapor density calculated for $C_{20}H_{34}O$ would give 10·0. If, however, dissociation should take place, splitting up the molecule into $C_{20}H_{32}+H_2O$, the vapor density of the mixture would be 5·0, not so far from the result obtained. That dissociation would take place was to be foreseen from the behavior on distillation, and was confirmed by the fact that after the operation the contents of the apparatus no longer had the original camphor-like odor, but possessed a distinct, rank odor of turpentine. It was also noticed that the compound itself by long standing bleached the cork of the test tube, probably due to traces of the free $C_{20}H_{32}$ resulting from the distillation.

An analysis was made of a fraction boiling at 171 to 172°, which gave C=81·39; H=11·40. Evidently, therefore, a mixture of the above with the more oxygenated, higher-boiling constituent, umbeliol, $C_8H_{12}O$.

The higher fraction (210 to 225°) was also subjected to fractional distillation and a compound obtained in considerable quantity, boiling without decomposition at 215 to 216° (uncorrected). This substance is also a colorless mobile liquid of aromatic but powerful odor, which, too strongly inhaled, attacks the mucous surfaces and causes headache. It is but slightly volatile, a quantity in an open watch-glass losing one mg. in an hour and a half. With concentrated sulphuric acid it gives a blood-red color, turning to brown and black. Water separates it from its solution in the acid. It is acted on violently by sodium, forming a blood-red, brittle, resinous substance; it is also acted on violently and decomposed by strong nitric acid. Elementary analysis gave

	I.	II.	III.	Calculated for $C_8H_{12}O$.
C ...	77 28	77·27	77·17	77·42
H ...	9 74	9·53	9·57	9·67

The vapor density determined, with the assistance of Mr. F. Slate, according to Victor Meyer, in diphenylamine vapor gave 4·33; calculated for $C_8H_{12}O$=4·29. The formula is, therefore, $C_8H_{12}O$.

It is isomeric, as far as I know, with no other known compound.

It is homologous, as far as its empirical formula is concerned, with common camphor, but has different properties.

Analysis III, above, was made two or three months later than the other two, after the substance had been standing in a test tube corked, with occasional removal of the cork. It will be noticed that oxidation is very slow, if it takes place at all, though a faint tint of yellow seemed to indicate such action. Experiments have been commenced with the object of determining the nature of these substances and their chemical constitution, if possible, and I intend to subject the reactions and derivatives of these interesting compounds to an extended investigation. As other duties, however, entirely occupy me at present, I have been compelled to postpone further investigation on this subject for some months. I therefore make this preliminary report and take the opportunity to reserve the ground for future work.—*Am. Chem. Jour.*, April, 1880.

GLEANINGS FROM THE GERMAN JOURNALS.

By Louis von Cotzhausen, Ph.G.

Glycerin Cement was first made by Hirzel, who recommended it as an excellent cement for vessels containing benzol, valatile oils, etc. Prof. Th. Morawski, who experimented with many different formulas, found that the best cement is obtained by adding 5 cc. of glycerin to 50 grams of litharge; if more glycerin is used, the mass hardens more slowly and does not become as firm. By mixing 5 volumes of glycerin with 2 volumes of water and using 6 cc. of this mixture with 50 grams litharge a cement is obtained which becomes quite hard in ten minutes, and harder in two hours than glycerin cement made by any other formula, but it is not as durable and firm after standing two days as that made by the first formula.—*Pharm. Centralb.*, March 11, 1880, p. 90., from *Dingl. Journ.*

Lametta, which, according to Skalmeit, consists of 98·93 per cent. of copper and 1·07 per cent. of silver, is used in China for manufacturing metallic threads used in garments, and in Germany for ornamenting Christmas trees.—*Ztschr. d. Allg. Oest. Apoth. Ver.*, March 10, 1880, p. 127, from *Gewerbebl. f. d. Grossherz. Hessen.*

Unguentum contra favum capitus is a salicylic pomade, recommended by Hager as an innocent cure of sore head of children and as an exterminator and preventive of vermin. It is made by reducing salicylic acid 10·0 grams and borax 3·3 to a fine powder, adding

yellow wax 50·0 and lard 250·0 grams, previously melted together and colored red with alkanet, balsam of Peru 10 grams, oil of bergamot 50 drops, oil star anise 20 drops, and rose water 30·0, and stirring until the ointment solidifies.—*Pharm. Centralh.*, March 11, 1880, p. 90.

Glycerin and Sodium Bicarbonate for Burns.—Sodium bicarbonate has been used extensively and very successfully lately as an application to burns by spreading a layer of the powdered salt over the burnt part and surrounding it with a moistened strip of linen; when thus used on fresh burns the pain is relieved immediately and blisters never form. Dr. Th. Koller recently tried repeated glycerin applications for burns, and reports that he found it not only equal, but even far superior to sodium bicarbonate for relieving the burning pain and preventing the formation of blisters, it at the same time leaving the skin soft while the sodium bicarbonate is apt to have the opposite effect. He applies the concentrated, syrupy, perfectly clear glycerin to the burns with the hand with but very slight pressure.—*Pharm. Ztg.*, March 6, 1880, p. 140, from *Neue Erf.*

Red Carbolic Acid.—The red color appearing in previously entirely colorless pure carbolic acid is considered by Hager to be caused by the ammonium nitrite existing in the atmospheric air. Acid filled into bottles while in a melted state in an atmosphere free from ammonia, and afterwards kept in air-tight bottles, will remain colorless.—*Pharm. Post*, March 16, 1880, p. 108, from *Pharm. Centralh.*

Separation of Quinia from Strychnia.—Dwars dissolved 5 grams of citrate of iron, quinia and strychnia in a little water supersaturated with ammonia, shook with chloroform, allowed the chloroform to evaporate, dried the residue at 110°C., and obtained 0·81 gram = 16·2 per cent. of alkaloids. The residue was dissolved in warm water, adding sufficient solphuric acid to obtain a neutral solution, to which ammonium oxalate was added in excess. On the following day the quinia oxalate was collected, washed, and dried at 100°C., when it weighed 0·704 gram = 0·618 quinia. The filtrate and wash-water were shaken with ammonia and chloroform. After evaporating 0·1775 gram amorphous alkaloid, strychnia and traces of crystallized quinia remained, which were treated repeatedly with pure ether, yielding ultimately 0·021 gram of pure strychnia.—*Pharm. Ztschr. f. Russl.*, Feb. 1, 1880, p. 76.

Quinia bimuriate is well adapted for hypodermic injections, because it is soluble in water in every proportion, and was warmly recom-

mended several years ago by Galignani, whose statements were contradicted by many Italian physicians, who erroneously used the ordinary quinia muriate. Dr. Vitali now explains the difference between the two salts, and again recommends the bimuriate, which he prepares by mutual decomposition between quinia bisulphate and barium chloride, obtaining it in not crystalline yellowish-white masses, which afford a snow-white powder. The salt thus obtained contains 81·61 per cent. of quinia, which is more than that contained in the officinal sulphate and in bisulphate, the former containing 74·33 and the latter 59·14 per cent. Quinia bimuriate is prepared most readily by accurately precipitating a solution of quinia bisulphate with barium chloride, filtering and evaporating to dryness.—*Pharm. Ztg.*, March 6, 1880, p. 140, from *Bulletino Farmaceutico di Milano.*

The Chemical Constitution of Picrotoxin, the poisonous constituent of Cocculus indicus, was again studied by L. Barth and M. Kretschy, who found that the picrotoxin is a mixture of three constituents, the two principal ones of which differ in the percentage of C to the extent of about 4 per cent., and exist in varying relative proportion, which explains the different results obtained by analytical chemists. The constituent for which the name of *picrotoxin* is retained contains the most C, has the formula $C_{15}H_{16}O_6$, and is exceedingly bitter and very poisonous. The second constituent has the formula $C_{25}H_{30}O_{12}$, is very bitter, not poisonous, and is denominated *picrotin*. But a very small percentage (about 2 per cent.) of the third constituent is present; it is not bitter, not poisonous, and is called *anamirtin* by the authors.—*Pharm. Centralh.*, March 11, 1880, p. 91, from *Chem. Centralbl.*, from *Wien. Anz.*

Quaiac Resin as a Reagent for Copper.—Schoenbein found that copper salts in the presence of cyanides yield a blue coloration with quaiac, and Purgotti discovered that the ferrocyanides, nitroprussides, sulphocyanates, cyanates, and also the alkaline chlorides, yield the same reaction as the cyanides, and utilized this discovery as a test for copper, proceeding as follows: The solution, which ought not to contain any substances which (like ferric salts) yield a blue coloration with quaiac, is mixed with the solution of an alkaline chloride, and is slowly poured into a test-tube containing an alcoholic solution of quaiac. If but the slightest trace of copper is present a blue coloration is visible at the point of contact of the two liquids, while, in case much copper is present, the whole mixture turns blue when shaken. Thus a distinct reac-

tion was obtained with 0·001 milligram $CuSo_4+5H_2O$ in 1 decigram of water.—*Ztschr. d. Allg. Oest. Apoth. Ver.*, March 10, 1880, p. 120, from *Gaz. Chim. Ital.*

Chloral hydrate, according to Dr. A. Belohoubek, should be entirely volatile, soluble in alcohol, ether and water, melt at 46°C., boil at 96° to 98°, and, when heated with potassa lye, should liberate chloroform, readily recognized by its odor. Another good test is that published by F. Ogston, which consists in adding to a moderately strong chloral hydrate solution yellow ammonium sulphide, when the colorless liquid soon turns orange-yellow or almost red. After standing for some time it becomes cloudy, liberating a gas of a very unpleasant odor. Chloroform, benzol, naphtha, formic acid, etc., do not yield a similar reaction, but croton chloral gives the same reaction with ammonium sulphide.—*Pharm. Ztschr. f. Russl.*, Feb. 1, 1880, p. 78, from *Rundschau f. Pharm. Chem.*

"**Curry Powder**," also known in some districts of Germany as *Ragout Powder*, is a coarse brownish-yellow powder, having a strong aromatic odor and taste, and is almost altogether imported from England, where it was introduced from India. The following two formulas for its preparation are highly recommended, the first yielding the so-called "Bengal Curry," which is preferred in East India, while the second is used very extensively in England, and is exported to Germany:

I.			II.		
℞	Piperis nigri,	40·0	℞	Piperis nigri,	20·0
	Capsici,	10·0		Capsici,	10·0
	Coriandri,	100·0		Coriandri,	80·0
	Fœnu Græci.			Carvi,	20·0
	Piperis albi.			Piperis albi,	10·0
	Carvi,	āā 25·0		Curcumæ,	50·0
	Curcumæ,	80·0		Zingiberis.	
	Zingiberis,	20·0		Cinnamomi,	*aa* 2·0
	M. f. pulvis grossus.			Alli sativi,	10·0
				M. f. pulvis grossus.	

—*Pharm. Centralh.*, March 11, 1880, p. 91.

"**Bacilla cuneiformia nasalia**," "**Cereoli nasales**," or "**Nasal Bougies**" are used in the treatment of nasal diseases. They are 8 to 10 cm. in length, about 6 or 8 mm. in thickness at the base, tapering to a point 3 or 4 mm. thick. The following recipes give an idea of their usual composition and the method of preparing them:

1. *Bacilla cuneiformia carbolica*, *carbolic nasal bougies*, used in the

treatment of excessive or offensive nasal catarrh, are prepared by dissolving in a water bath white gelatin 55·0, in glycerin 30·0, and distilled water 20·0, adding pure carbolic acid 0·2, and pouring the mixture into 15 moulds made of glass or waxed (paraffin) paper.

2. *Bacilla cuneiformia tannica, or tannin nasal bougies* are moistened before introducing them into the nose and are made by mixing tannic acid 2·0, tragacanth 6·5, and marshmallow root 2·0, adding glycerin 6·0, and water 3·5, and making into tapering bougies.

3. *Bacilla cuneiformia zincica* consist of white gelatin 60·0, glycerin 40 0, distilled water 20·0, and zinc sulphate 0·5, made into 20 bougies. —*Pharm. Centralh.*, March 11, 1880, p. 87.

Condensed Goat Milk, made by Sigmond Bros. at Klausenburg, was analyzed by Dr. R. Godeffroy, who found it to contain in 100 parts: Water, 20·98; milksugar, 15·72; canesugar, 26·71; fatty substances (extracted by ether), 16·95; casein (albuminous substance), 17·20; milksalts (percentage of ashes), 2·64 parts.—*Ztschr. d. Allg. Oest. Apoth. Ver.*, March 10, 1880, p. 118.

Hager's Pilulæ antiphlogistigæ (also called Acid Cinchona Alkaloid Pills, Anti-inflammation Pills, Catarrh Pills), are said to cure bronchial catarrh, cold in the head, coughs, etc., usually in the course of a few hours. They are made by the following formula:

℞	Quinidiæ sulphatis, cinchonidiæ sulphatis, . .	*ana* 5·0
	Tragacanthæ, ...	7·0
	Radicis althææ, radicis gentianæ, ...	*ana* 3·0
	Ligni santali rubri, ...	1·0
	Glycerinæ, acidi hydrochlorici, ...	*ana* 7·5
	M. f. pil. 200.	

Dust with powdered cinnamon and dispense in a bottle. Dose: Take 6 pills immediately when the first symptoms of bronchial catarrh, etc., appear; then 2 pills every hour and 5 pills at bed-time, followed by 3 pills every 3 hours during the next day and 6 pills before going to bed. —*Pharm. Centralh.*, March 18, 1880, p. 93.

Salicylic Acid and Powdered Charcoal are very objectionable ingredients in tooth powders and mouth washes, in Dr. W. Suerssen's opinion, who claims that the charcoal, even when finely powdered, will polish off the enamel of the teeth mechanically, and besides will settle permanently in the gums, forming blackish-blue rings, while the salicylic acid, even in very dilute solution (1:1000) attacks the teeth, and ought, therefore, only to be used in the treatment of various morbid conditions of the mouth. The author considers precipitated chalk

the best tooth powder and alcohol the best addition to a mouth wash, and states that both may be perfumed if desired.—*Ibid.*, March 25, 1880, p. 108.

"**Succus Citri Depuratus**" is the name suggested by Hager for the purified lemon juice prepared by Fleischer & Co., who, by introducing it into the German market, according to Hager, supplied a long-felt demand for a substitute for the commercial, cloudy, Italian juice, which almost always contains acetic acid. Fleischer's German juice is prepared by purifying and clarifying fresh lemon juice, is either colorless or slightly yellowish, perfectly clear, contains 9·3 to 9·4 per cent. acid, and keeps for weeks in the cold season of the year, even in partially filled bottles, and probably equally as long in the hot season if kept in full and well-corked bottles.—*Ibid.*, p. 105.

Preparation of Potassium Cantharidate and Cantharidin by Dialysis.—E. Dieterich recommends digesting for 5 hours, and boiling slightly for 15 minutes, 1,000 grams of coarsely-powdered cantharides, 50 grams potassium hydrate, and 6,000 grams of water. The cooled liquid is strained and expressed, and the residue again treated as before, adding but 20 grams potassium hydrate. The liquid is filtered and the filtrate transferred to three dialyzers, about 60 cm. in diameter, which are suspended in correspondingly large, shallow, porcelain-lined, iron dishes. In these dialyzers the filtrate is digested for 5 to 6 days, the water being replaced as it evaporates. After neutralizing the dialyzed brownish liquid with dilute sulphuric acid, powdered charcoal is added, the whole evaporated to dryness, the dry residue mixed with a little barium carbonate, and then boiled with acetic ether; the etherial liquid is distilled, the remaining cantharidin washed with alcohol and recrystallized from acetic ether, when it is obtained in brilliant white crystals. Thus, the author obtained a yield never below 2·80 grams, while the usual method never yields over 2·30 gram.—*Ibid.*, March 11, 1880, p. 87.

Detection of Potassium Iodide in Potassium Bromide.—Hager recommends powdering a number of crystals, dissolving 0·1 gram of this powder in 10 or 12 cc. of 10 per cent. ammonia water, adding 1 drop of silver nitrate solution, and shaking, when a clear solution will be obtained, unless iodide of silver is present, a small percentage of which will render the liquid decidedly cloudy. This test is sufficiently accurate for indicating the presence of an *objectionable* percentage of potassium iodide, but will not answer for detecting very minute traces.

Potassium chloride in potassium bromide is detected, by the same author, by dissolving 0·1 gram powdered potassium bromide in 2 or 3 cc. of water, mixing well with a solution of 0·16 gram of silver nitrate in 3 or 4 cc. of water, adding 10 or 12 cc. of solution of ammonium carbonate, shaking frequently for about 10 minutes, and filtering, returning the filtrate to the filter until it passes entirely clear. To 3 or 4 cc. of the clear filtrate nitric acid is then added, drop by drop, until neutralized, when, in case potassium bromide alone was present, the liquid remains clear, while in the presence of silver chloride it will be opalescent or cloudy, according to the percentage of chloride present.

Hydrochloric acid in hydrobromic acid may be detected in a similar manner, using 2 or 3 drops of the acid, 7 to 10 drops of solution of silver nitrate, adding about 10 cc. of solution of ammonium carbonate, shaking, macerating, filtering and supersaturating with nitric acid.—*Ibid.*, p. 85-87.

Arsenic in hydrochloric acid is detected by Hager's modification of Bettendorf's method by dropping the acid in very small drops on thick tin-foil, setting aside, and exposing to a heat of from 50° to 90°C. Concentrated acid and acid diluted with an equal bulk of water, and containing $\frac{1}{5000}$ or $\frac{1}{10000}$ arsenic, immediately turn brown on the tin-foil; when diluted with 8 or 10 times its bulk of water the reaction is considerably slower. A very dilute acid, containing $\frac{1}{20000}$ arsenic, dropped on tin-foil in small drops, and placed in a lukewarm place, yielded steel-colored spots. The test is not reliable for an acid containing but $\frac{1}{30000}$ arsenic.—*Ibid.*, March 25, 1880, p. 101.

VARIETIES.

Duboisia Sulphate.—S. D. Risley, M.D., Lecturer on Ophthalmoscopy in the University of Pennsylvania, in an interesting article in the "Amer. Jour. Med. Sci.," April, 1880, "On the relative value of the sulphates of atropia and of duboisia in ophthalmic practice," states that the following conclusions seem justifiable:

1. That in solutions not stronger than two grains to the ounce duboisia is free from danger.

2. That the two-grain solution of Duboisia sulphate more rapidly paralyzes the ciliary muscle than a four-grain solution of atropia sulphate.

3. That the duration of its effect is less than half that of atropia.

4. That the preparations now in the market are more liable to irritate the conjunctiva than neutral solutions of the sulphate of atropia.

5. That in the treatment of inflammations of the eye duboisia is quite as useful as atropia, and therefore may be used as a substitute.

Pilocarpina.—Two remarkable observations have been published abroad during the past year relative to the use of pilocarpina. In one case a patient of Dr. Schmitz, of Cologne, previously completely bald, after three injections of pilocarpina began to have a luxuriant growth of hair, and at the end of four months had a dense covering for the head, part black in color, part grizzled and part white. The other was reported at the Ophthalmological Congress at Amsterdam last September, by Dr. Coppez, of Brussels, and published in the "Annales d'Oculistique," September and October, 1879. The patient, suffering from serious iritis with trouble in the vitreous body, received three injections of chloralhydrate of pilocarpina, and his hair, previously white, took on its original color and texture. These are the only instances in which pilocarpina may be presumed to have had this effect, and the question arises whether it was an accidental coincidence or the result of the drug.—*Chicago Med. Gaz.*, March 20, 1880.

Chloral in the Vomiting of Pregnancy.—Dr. Herzberg, of the Berlin Charité ("Berl. Klin. Woch."), has found chloral of great utility in vomiting from any cause, and in some affections, as gastralgia, rapidly effective. In this paper he wishes to call attention to its great efficacy in the vomiting of the early months of pregnancy. He always uses this formula: Chloral, 1½; water, 100, and syrup of orange peel, 20 parts, giving a spoonful every two hours. A few spoonfuls suffice to stop the vomiting for a long time. If after some days it returns again, a recurrence to the remedy entirely removes the evil.—*Louisville Med. News*, March 13, 1880.

Benzoate of Sodium in Diphtheria.—Dr. Letzerich has successfully treated, with benzoate of sodium, 27 cases of diphtheria which came under his care during an epidemic of the disease in Berlin. Of these cases eight were severe, accompanied by high fever, delirium, setention of the urine and feces, existing often before the extensive local affection had made its appearance. In the blood there was found numerous bacteria and plasma corpuscles, from which, by cultivation in veal broth, very large colonies of micrococci became developed. The dose of sodium benzoate for children and adults is to be regulated by the weight of the body. The formula for infants under one year old is

℞ Sodii benzoat. pur., ... 5·0
Aquæ destillat., ...
Aquæ menth. pip., ... *aa* 40·0
Syrup. cort. aurant., ... 10·0
Half teaspoonful every hour.

The dose for children between one and three years of age is given at 7 to 8 grams in the course of a day; for children between three and seven years, 8 to 10 grams, over seven years old 10 to 15 grams, to be taken daily; no unpleasant effects have been observed even in young infants. The diphtheric membrane was sprinkled with the benzoate of sodium in powder applied through a glass tube or quill. There is no slough formed, and thereby the danger is averted of its acting as a firm covering under which an energetic development and growth of the organism can take place.

The insufflation was made every three hours in severe cases; in the mild forms two or three times daily. The author also recommends this remedy in gastric or intestinal catarrh, particularly of infants, and states that at times the results are surprising in these latter cases. He firmly believes in the statement of Klebs, that it is to be recommended in all diseases which originate by infection.—*Boston Med. and Surg. Journ.*, from *Berlin. Klin. Wochens.*

Iodized Phenol.—Battey's formula for iodized phenol, iodine cryst. ℥ss, acid carbolic ℥i, is highly recommended by Dr. J. H. Bellamy in other than uterine affections. He has found it very useful in certain skin diseases, particularly those attended with itching. In the eczema marginatum it works very promptly. It is to be diluted generally with equal parts of glycerin, and applied twice a day.—*N. Carolina Med. Jour.*, from *Toledo Med. and Surg. Jour.*, March, 1880.

Cedron as a Substitute for Quinia.—Admiral Lapellin draws attention to a bean which is used by the inhabitants of Central America in the treatment of the cold fever, and which is said to be a good subatitute for quinia. Dr. Coignard, who obtained the remedy in Puerto Arenas, Costa Rica, obtained favorable results with it, and Drs. St. Père and Quesnel found it even more powerful than sulphate of quinia. The bean is cut into bits as large as a pea, several of which are given in the interval between the paroxysms. This almond or bean is obtained from the Simaruba ferruginea.—*Med. Chir. Rundschau*, Nov., 1879, from *The Med. Record*, from *Nashville Journ. of Med. and Surg.*, April, 1880.

Iodoform Paste.—The "Medical Gazette" advises the following combination for the purpose of disguising the odor of the drug: ℞ Iodoformi ℥i, Mucil. cum glycerina gtt. xx, Ol. menth. pip. (seu neroli, seu caryoph.) gtt. i. M.—*Proceedings of the Med. Soc. of the County of Kings, New York*, April.

Tartrate of Morphia.—The new preparation of neutral tartrate of morphia is a useful adjunct to our therapeutics. Being very soluble it passes quickly out of the sytsem, and gives less of the unpleasant after effects than either the muriate or acetate. Its great solubility makes it particularly advantageous for subcutaneous injection. It gives little smarting or irritation when thus administered, and the solution never clogs the finest needles.—*The Med. Press and Circular*, London, March 10th, 1880.

Improved Caustic Sticks.—Dr. Sawostizki called the attention of the Moscow Surgical Society to an improvement in the preparation of sticks of nitrate of silver. It consists in melting together five parts of nitrate of silver with one part of nitrate of lead, forming an argentum plumbo-nitricum. Sticks formed of this are preferable

to those of the ordinary nitrate, as they are not easily broken and can be pointed just like a lead pencil.—*Ibid.*, April 7th, 1880.

Ergot in Pharyngitis.—In chronic pharyngitis, where the blood-vessels of the pharynx are enlarged and tortuous and the secretion moderate, the following is recommended:

℞	Ergotin, ...	gr. xx.
	Tinct. iodine, ...	fl. ʒi.
	Glycerin, ...	fl. ʒi. M.

Sig. Apply to the pharynx freely twice daily with a camel's-hair brush.—*The Ohio Med. Reporter*, April, 1880.

External use of Atropia for the Pain of Cancers.—M. Anger uses, with great success, compresses saturated with a neutral solution of sulphate of atropia, and applied over the seat of pain. The compress is covered with oiled taffeta, or better with sheets of gutta percha, to prevent evaporation, and renewed three or four times a day.

The strength of the solution employed is (grs. xv) 1 gram of the sulphate to (Oii) 1,000 grams of water. He has never seen signs of absorption of the medicine, such as dilatation of the pupil, dryness of the throat, etc. This action is not denied, but it is presumable that the action is local, contraction of the vessels, diminution of the sensibility. The facility of applying it and the cleanness of this method give marked advantages over hypodermic injections and ointments. At the same time the marked relief observed in the terrible pains of cancer seem to recommend its use.—*Chicago Med. Journ. and Exam.*, April, 1880.

Unalterable Cold Cream.—The "Repertoire de Pharmacie" gives the following formula for a cold cream that possesses the property of not becoming rancid:

Quince mucilage, ...	(ʒiiss)	40 grams
Almond soap, ...	(gr. xv)	1
Stearic acid, ...	(ʒiiss)	10
Glycerin, ...	(ʒss)	2

—*Ibid.*

Cultivation of the Cinchona Tree in California.—The "Pacific Medical and Surgical Journal" writes on the cinchona tree as follows: "There is no subject on which our legislature could act with so much benefit to the Pacific coast as in the adoption of measures for introducing the growth of the cinchona tree. We are more and more convinced, from all we read of its introduction and cultivation elsewhere, that there are many sections of country in our State in which it would flourish and prove a source of bountiful revenue. The latest evidence of this which we have met with is in a communication to the Department of Agriculture at Washington from Willis Weaver, written at Bogota, South America. Mr. Weaver has

studied the habits and history of the tree, which, he says, seeks a soil inclining to dryness, but well watered during a portion of the year. We copy from his letter a few passages which may be found in the "Scientific American" for February 28th:

"'The coasts of Northern California and Oregon would fulfill the conditions as to moisture; the slopes of the mountains would probably furnish hilly ground very similar to that occupied by the tree in its native habitat; while I believe that the temperature would admit of its cultivation even north of the mouth of the Columbia. It is also uncertain as to how far any undue dryness of the atmosphere may be overcome by irrigation. The surprising results already attained in the cultivation of the trees prepare us to expect further advances, and this may be one of them as naturally as anything else.

"'It is well known that the barks produced under cultivation are much superior to the natural bark, as the process of mossing the tree causes a remarkable development of the alkaloids in which their virtue consists; also, that the cultivated trees are not destroyed. A strip is taken off reaching the length of the trunk, and one-third its circumference. The wound is then dressed with straw matting, and kept wet until the bark forms anew. The next year another strip is taken, and so on indefinitely. I am told that the harvest begins when the tree is five years old, but am not in a position to verify the statement.

"'I have calculated roughly, according to the prices of land and labor here, that a plantation of a hundred acres might be put in at less than $1,000 an acre, covering all outlay, or, say $1,500 to cover interest and all contingencies. A yield of $8,000 an acre has been reported from Indian plantations.'"—*The Boston Med. and Surg. Jour.*, April 29, 1880.

The Action and Uses of Hyoscyamia.—Mr. Engledue Prideaux, assistant medical officer at the Friends' Retreat, near York, presents in the "Lancet," October 11, 1879, an elaborate paper based upon very extensive experience in the use of the drug, of which the following, taken from the "Medical News and Abstract," Jan., 1880, is a summary:

1. That in most cases of mania, or where there exists great excitement of an aggressive and destructive character, or rapidity of movement and speech, the use of the drug is the most effectual and rapid means of exercising that form of restraint which has been termed "chemical restraint."

2. That in cases of acute mania it will produce sleep and quietude when all other drugs have failed, and is one of the most rapid and reliable narcotics we possess.

3. That in the treatment of the epileptic status in epileptic mania, it diminishes the number, frequency and severity of the attacks, especially if its administration be extended over some time.

4. That in delusional insanity, especially the mania of suspicion and other forms of mania where the delusions are varying and changeable, it has a decided action in producing such an altered condition of the cerebral status that a condition which has been termed "physiological mania" results, and this so eclipses the former delusions and hallucinations that they are forgotten, and the mind becomes clear; while if the subjection to the influence of the drug be continued, it ultimately leads, under

favorable circumstances, to a permanent condition of quiescence and restoration to a healthy state of mind.

5. That in chronic dementia, associated with destructive tendencies, bad habits, and sleeplessnes, the condition of the patient much improves after a continued course of small doses of the drug.

The disadvantages that have occurred in its use, and which have to be guarded against, are: the dryness of the tongue and pharynx that occurs, especially after a prolonged administration. This has been thought to contra-indicate its use in cases of artificial feeding, but provided the tube be dipped into an oily liquid before passing, I have not found it any inconvenience. The attacks of vomiting that have occurred in some cases after an administration of some weeks, necessarily lead to a discontinuance of the drug. Vomiting occasionally occurs after one dose, even a small one, and in two cases mentioned by Dr. Lawson, hæmatemesis took place. Where rapid and sudden action of the drug is feared in feeble cases, it is better to administer it with the food.—*Chicago Med. Gazet.*, April 5th, 1880.

Solid, Crystallized, Fuming Sulphuric Acid, containing frequently as much as 98 per cent. anhydride, is beginning to be used extensively in the manufacture of alizarin, eosin, etc., and is at present not only manufactured at Bohemia, as formerly, but also in Freiberg, Ludwigshafen, Mannheim, Schlebusch and London. According to Prof. Stoelzel, organic substances (wood, saw-dust, etc.), brought into contact with this acid, are reduced to charcoal, sufficient heat being sometimes generated to cause ignition. If mixed with one-fourth its bulk of water, the acid will immediately transform the latter into vapor, the transformation being accompanied by a generation of light and an explosion. The acid will also explode when heated in closed bottles to 50°C.—*Pharm. Centralh.*, Dec. 16, 1879, p. 470, from *Handelsbl. d. Chem. Ztg.*

An Innocent Green Coloring Substance, for coloring confectionery, candy, etc., can be extracted, according to Zech, from coffee beans by reducing them to powder, extracting the oil with ether, allowing them to dry, and mixing with sufficient white of egg to make a kind of gruel, which is then exposed to the air for a few days, when an emerald-green color is produced. Another and simpler method consists in pouring water on the reduced beans, previously deprived of their oil, and extracting the coloring matter by washing in (?) alcohol.—*Pharm. Ztg.*, Jan. 3, 1880, p. 3, from *Gemeinnuetz. Wochenschr.*

Preparations of Pepsin and Iron.—At a recent meeting of the Paris Academy of Sciences, Vulpian, Chatin, Personne and Peter energetically attacked all pharmaceutical specialties, and particularly all preparations of pepsin and iron, which in their opinion scarcely ever contain what their manufacturers claim, and in nine cases out of ten are entirely inefficient. Vulpian particularly found fault with the different

pepsins, diastases and pancreatins of the (French) market, and still more so with the wines and elixirs made from these, in which the alcohol almost entirely counteracted the medicinal effect of these principles. Chatin, the director of the School of Pharmacy, suggested to banish all proprietary medicines from drug stores, and advised physicians not to prescribe them under any condition. Similar views were expressed by Vulpian and Prof. Peter. Personne referred to iron specialties, and particularly to Bravais' dialyzed iron, which he considered impure and entirely insoluble in the stomach and therefore of no value, and Prof. Berthelot stated that it should be employed in every case where the use of an absolutely inert iron preparation is desired.—*Pharm. Post*, Dec. 16, 1879, p. 374.

White Furs are Dyed by Sieglitz & Co. by applying to the ends of the hair a mixture of 10 parts gum arabic, 5 parts lead acetate, 10 parts fatty white clay, 10 parts basic copper acetate and water, drying, immersing into a decoction of litharge with milk of lime, treating with diluted ammonium sulphide, and finally with an extract of galls. The ends remain white, while the lower portion of the hair is dyed brown.—*Chem. Centralbl.*, Dec. 17, 1879, p. 816.

Artificial Wool is made from flax, jute or hemp waste, or from rags of these materials, by M. Neumann's patented process, by first treating these substances with soda and soap, at 100° (3 kg. soda and 1 kg. soap to 600 liters water), then transferring them to a lukewarm bath containing calcium chloride and (or?) magnesium sulphate, adding hydrochloric acid, and finally treating them for a short period with a 0·5 per cent. solution of sulphurous acid, and washing them.—*Ber. d. Deutsch. Chem. Ges.*, xii (1879), p. 2272.

Benzoic Acid is Prepared from Benzoin by R. v. Wagner by dissolving the resin by digesting with 3 to 4 parts strong acetic acid, decanting the brown solution, pouring into 4 parts boiling water and removing the grayish-brown resin, which separates by filtration, when the greater portion of the benzoic acid will crystallize from the filtrate on cooling, while another yield is obtained on evaporating the liquid, previously partially saturated with calcium hydrate. The benzoic acid, separated from the acetic acid solution, possesses, after drying and melting, a pleasant odor resembling storax, and can be used for aromatizing and for preparing fumigating powder, etc. The solubility of benzoin in acetic acid might also be advantageously made use of for preparing disinfecting and fumigating essences. Balsam tolu, balsam Peru and storax likewise dissolve in acetic acid.—*Pharm. Ztg.*, Jan. 7, 1880, p. 11, from *Pol. Notizbl.*

MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, May 18th, 1880.

Mr. Alonzo Robbins was called to the chair, and the minutes of last meeting were read and approved.

Donations to the library were called for, and the Registrar exhibited twelve volumes of the "American Journal of Pharmacy," almost all of them quite scarce, presented to the College by our fellow member Robert Shoemaker. This enables the Librarian to report that the second set of the JOURNAL for the library has now been completed.

The thanks of the College was directed to be returned to Mr. Shoemaker for his most timely donation.

A paper upon Koumys, by G. L. Truckenmiller, Ph. G., was read by the Registrar. A paper upon the same subject was also read by our fellow member Dr. L. Wolff. Both papers were referred to the Publication Committee.

Prof. Remington inquired as to the manner of making ointments and cerates, as practiced by the members present; the Pharmacopœia directs that all of them should be stirred till cool. Prof. Remington stated that he had tried the opposite plan of melting the materials with the least possible heat, straining into a proper recipient and permitting it to cool gradually without any stirring or any disturbance whatever. His experience was in favor of this plan.

A formula for iodized oil of bitter almonds was asked for by a member. The formula was reported, iodine gr. xx, oil of bitter almonds ʒi—M., and permitting it to stand until it dissolves, which is only effected after considerable lapse of time. Professor Remington has also experimented with oil of sassafras instead of oil of bitter almonds, and has observed that is a very much better solvent for iodine than the oil of bitter almonds.

Prof. Remington called attention to the approaching meeting of the Pennsylvania Pharmaceutical Association, which will take place at Allentown in the early part of June, and recommending the trade here to connect themselves in membership.

There being no further business, on motion adjourned.

T. S. WIEGAND, *Registrar.*

PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

The Pharmaceutical Society and the Braunhart Prescription Bill.—At a meeting of the California Pharmaceutical Society, held March 17th, for the purpose of endorsing the action of E. Painter and W. M. Searby, in their efforts to secure the passage of the Braunhart bill, the following was unanimously adopted:

WHEREAS, A special committee was appointed by this Society to devise means to secure the passage of the Braunhart bill for the suppression of percentages paid by apothecaries to physicians on their prescriptions, and

WHEREAS, Two of our members have taken an active part in securing the bill's

passage, thereby incurring the displeasure of certain physicians, who now seek to injure the business of these gentlemen; therefore be it

Resolved, By this Society, that we regard the Braunhart bill as a just one, and likely to deter unprincipled apothecaries from continuing the nefarious practice.

Resolved, That we heartily endorse each and every action of Messrs. E. Painter and W. M. Searby, with whom we are anxious to share the odium (?) sought to be attached to them by those who we have reason to believe profit by the practice we aim to suppress.

Cincinnati College of Pharmacy.—The monthly meeting was held April 14th, with a large attendance. A fine collection of rare drugs (about 40 different specimens) was received from Messrs. James G. Steele & Co., of San Francisco, Cal., in acknowledgment of which the sincere thanks of the College were offered. Mr. J. U. Lloyd showed a specimen of adulterated santonin, containing 85 per cent. boracic acid and 15 per cent. santonin. After discussing at some length the revision of the Pharmacopœia the meeting adjourned.

EDITORIAL DEPARTMENT.

Decennial National Convention for Revising the Pharmacopœia.—*Wednesday, May 5th. First Day. First Session.*—The Sixth Decennial Convention for the Revision of the Pharmacopœia of the United States met in the National Medical College, H street, between Thirteenth and Fourteenth streets, N. W., Washington, D. C., May 5th, 1880.

The Convention was called to order by the only surviving officer of the last convention, Dr. James E. Morgan, of Washington, at 12 M., who, on motion of Dr. R. E. Rogers, of Philadelphia, was elected temporary Chairman, and Dr. D. W. Prentiss, of Washington, was elected temporary Secretary.

Dr. Morgan, upon taking the chair, referred in a feeling manner to the fact that he was the only surviving officer left, thanked the Convention for the honor conferred upon him, and trusted that the proceedings would be characterized by harmony, and the important business be successfully accomplished.

COMMITTEE ON CREDENTIALS.

The first business in order being the appointment of a Committee on Credentials, the Chairman selected Dr. W. S. W. Ruschenberger, A. B. Taylor and W. S. Thompson as this committee.

After a recess of fifteen minutes the committee reported that they had received credentials from the following bodies: Massachusetts College of Pharmacy, Philadelphia College of Pharmacy, Louisville College of Pharmacy, Maryland College of Pharmacy, Medical Society of the District of Columbia, National Medical College Columbian University; Medical Department of the University of Georgetown, D. C.; National College of Pharmacy, Washington, D. C.; Medical Department University of Pennsylvania, Massachusetts Medical Society, Bellevue Hospital Medical College, College of Pharmacy City of New York, College of Physi-

cians and Surgeons Medical Department of Columbia College; Dartmouth Medical College, Hanover, N. H.; Connecticut Medical Society, Rush Medical College, Chicago; Philadelphia County Medical Society, State University of Iowa Medical Department, Iowa State Medical Society, St. Louis College of Pharmacy, University of Michigan School of Pharmacy; College of Physicians, Philadelphia; Medical Department of the U. S. Army, University of the City of New York Medical Department, Medical Department of Medicine and Surgery of Michigan University, Chicago College of Pharmacy, Cincinnati College of Pharmacy, Woman's Medical College of Philadelphia, Medical College of Indiana, Medical Society of the State of New York, College of Medicine of Syracuse University, Medical Department of U. S. Navy, U. S. Marine Hospital Service; Miami Medical College, Cincinnati; Pennsylvania College of Pharmacy, Missouri Medical College, St. Louis; College of Physicians and Surgeons of the City of New York; Medical Department of Howard Univerity, Washington, D. C.; University of Albany, N. Y.; Jefferson Medical College, Philadelphia; New York Academy of Medicine; Medical and Chirurgical Faculty of Maryland, Baltimore; University of Maryland, Women's Medical College, New York; North Carolina State Medical Association.

Objection was made to admitting the delegates from some of the bodies, on the ground that they were not strictly entitled to seats under the call of the Convention, which embraced "incorporated State Medical Societies, incorporated Medical Colleges, incorporated Colleges of Physicians and Surgeons, and incorporated Colleges of Pharmacy."

Dr. Busey, of Washington, moved to admit delegates from Medical Departments of the Army and Navy and from the Marine Hospital Service; also those from the Medical Society of the District of Columbia. Carried.

The motion by Prof. R. E. Rogers to admit the delegates from Philadelphia County Medical Society gave rise to considerable discussion.

Prof. Remington moved that the Chairman of the delegation from the Philadelphia County Medical Society, Dr. Henry H. Smith, be invited to state the circumstances which led to the appointment of these delegates. Dr. Smith explained that the Society had been invited to send delegates by Dr. Morgan, the only remaining officer of the previous convention, that they had taken considerable interest in the work of revising the Pharmacopœia, had prepared a report upon the revision, which had occupied them considerable time, and that they had not anticipated any objection to the admission of their delegation, as similar bodies had been received at previous conventions without challenge.

After hearing the statement of Dr. Smith the Convention decided to admit the delegation, and Prof. Rogers' motion was therefore carried.

COMMITTEE ON NOMINATION.

Mr. Thomas Doliber, of Boston, moved that a committee on nominations be appointed, consisting of one member from each body represented in the Convention, which was carried, whereupon the Secretary called upon each of the various delegations to name one of their number to serve upon this committee, when the following were appointed: S. A. D. Sheppard, A. B. Taylor, C. Louis Diehl, Jos. Roberts,

Dr. Antisell, Dr. W. W. Johnson, Dr. S. C. Busey, R. B. Ferguson, Dr. H. C. Wood, Dr. E. S. Wood, Dr. F. A. Castle, Chas. Rice, Dr. E. Curtis, Dr. H. M. Field, Dr. H. H. Smith, W. H. Crawford, H. B. Parsons, Dr. I. M. Hays, Dr. D. L. Huntington, Dr. H. G. Piffard, G. M. Hambright, Dr. A. Fennel, Dr. C. Marshall, Dr. J. D. Rushmore, G. R. Metcalf, Dr. B. F. Gibbs, Oscar Oldberg, Dr. J. F. Judge, Dr. M. Roche, Dr. O. A. Wall, Dr. J. C. Peters, G. S. Palmer, Dr. R. E. Rogers, Dr. L. Johnson, W. J. C. Du Hamel, Dr. G. H. Fox, Dr. T. F. Wood.

The Convention then adjourned until 3 P. M.

First Day. Second Session.—The Convention reassembled at 3.30 P. M., and the report of the Committee on Nominations was read as follows: For President, Robert Amory, M.D., Brookline, Mass.; Vice-Presidents—Dr. S.C. Busey, Washington, Prof. P. W. Bedford, New York; Secretary, Dr. F. A. Castle, New York; Assistant Secretary, Dr. C. H. A. Kleinschmidt, Washington, D. C. The report was adopted.

Dr. Amory, upon taking the chair, made a few appropriate remarks, thanking the Convention for the honor conferred upon him.

Prof. Maisch moved that Dr. E. R. Squibb, of Brooklyn, be invited to participate in the affairs of the Convention with all the rights and privileges of a delegate. Carried unanimously.

Mr. A. B. Taylor, Secretary of the Committee upon Final Revision of the Pharmacopœia of 1870, read his report, which was accepted and adopted.

PRESENTATION OF REPORTS.

The following bodies presented reports upon the Revision: College of Physicians of Philadelphia, Philadelphia College of Pharmacy, Maryland College of Pharmacy, Louisville College of Pharmacy, American Pharmaceutical Association, Pennsylvania Pharmaceutical Association, Philadelphia County Medical Society, National Medical College, National College of Pharmacy.

On motion of Prof. Diehl, the President of the Pennsylvania Pharmaceutical Association, Mr. Chas. H. Heinitsh was invited to a seat in the Convention with all the rights and privileges of a delegate. Unanimously carried.

The following resolutions, offered by Prof. Maisch, were adopted:

Resolved, That the Committee on Nominations be instructed to nominate a committee of Revision and Publication, consisting of —— members.

Resolved, That the Committee on Nominations be instructed to report a plan for revising and publishing the Pharmacopœia, and to make provision for the revision of the Pharmacopœia in the future.

The motion of Mr. A. B. Taylor, that the final committee consist of twenty-five members, was carried.

The Convention then adjourned to meet on Thursday, May 6th, at 12 M.

On being called to order at this hour, it was stated that the Nominating Committee were not ready to report, when an adjournment till 2 P. M. was called for and passed. This was repeated at 2 P. M., and the meeting adjourned till 10 P.M.

Thursday, May 6th. Second Day, Night and early Morning Session.—The Convention was called to order at 10 P. M. by the President. The report of the Committee on Nominations was read. The following were nominated and elected as the *Committee of Revision and Publication of the Pharmacopœia of the United States*:

Dr. Robert Amory, Brookline, Mass.
Dr. F. A. Castle, New York.
Dr. D. L. Huntington, U. S. Army.
Dr. B. F. Gibbs, U. S. Navy.
Prof. O. Oldberg, U. S. Mar. Hosp. Serv.
Prof. P. W. Bedford, New York.
Prof. C. Louis Diehl, Louisville, Ky.
Louis Dohme, Baltimore, Md.
Thos. Doliber, Boston, Mass.
Dr. Lawrence Johnson, New York.
Prof. J. F. Judge, Cincinnati.
Prof. J. M. Maisch, Philadelphia.
Prof. G. F. H. Markoe, Boston.
H. B. Parsons, Washington, D. C.
Dr. H. G. Piffard, New York.
Prof. Jos. P. Remington, Philadelphia.
Charles Rice, New York.
Dr. W. S. W. Ruschenberger, Phila.
Dr. E. R. Squibb, Brooklyn.
A. B. Taylor, Philadelphia.
W. S. Thompson, Washington.
Prof. O. A. Wall, St. Louis, Mo.
Dr. E. S. Wood, Cambridge, Mass.
Dr. T. F. Wood, North Carolina.
Prof. T. G. Wormley, Philadelphia.

The report of the American Pharmaceutical Association, so far as it relates to general principles, was practically adopted. These refer to the following points:

The text of the U. S. Pharmacopœia to be written in the English language. Titles of preparations, etc., to be in both Latin and English. An alphabetical arrangement of the subjects, use of synonyms, cross references, description of crude drugs, description of chemicals, introduction of chemical formulæ, processes for chemicals, expressions of quantity, numerical relations of quantities, fluid extracts, the best practical process to be left to final committee. Temperature to be expressed in both Centigrade and Fahrenheit. Definition of physical propertiesof drugs and preparations to be given. A uniform method of taking specific gravity to be perscribed. When definite expressions of weight are necessary, as in pills, etc., metric and apothecaries' weight to be used. Weight of finished product to be specified, and a number of tables were proposed to be appended.

The proposition to have a table of doses in the Pharmacopœia was negatived. A table of saturations to be added, and such other tables as might seem advisable.

The Committee of Revision and Publication was instructed to award the publication of the Pharmacopœia of the United States to the publishing house offering the best terms; the committee to hold the copyright, the price of the work to be fixed, and the book to be sold through the ordinary trade channels. The authority was also given to publish a new edition or a supplement to the Pharmacopœia at the end of five years, or oftener if necessary. The committee were instructed to fill all vacancies which may occur in its body, and to drop, by a vote of two-thirds of the committee, any member who may neglect to perform the work which he had accepted, or who failed to attend five consecutive meetings of the committee without valid excuse.

The committee were also empowered to employ expert labor.

It was ordered that the call for the next convention should include "all incorporated pharmaceutical and medical colleges, all incorporated pharmaceutical and medical societies, and the army, navy and marine hospital service of the United States."

It was resolved that the American Pharmaceutical Association and American Medical Association be invited to send delegatss to the next convention.

The roll of the convention was called, and seventy-four delegates responded.

Dr. Minis Hayes called the attention of the convention to the fact that the "College of Physicians and Surgeons in the city of New York"[1] was a society

[1] This is not the College of Physicians and Surgeons (Medical Department Columbia College), which was represented also, but the New York County Medical Society in disguise (see "New York Medical Record," May 15, p. 551.

which had long since ceased to exist, and questioned the legality of the admission of their delegates, and moved that their names be dropped from the roll. Motion not carried.

The usual complimentary resolutions were then adopted, and the convention, at 1.45 A.M., May 7th, adjourned.

The Local Committee of Reception made elaborate arrangements for the entertainment of the visiting delegates with their ladies. A reception was held on the 5th at the Corcoran Art Gallery, on the afternoon of the 6th at the White House by the President of the United States, in the evening at the Naval Observatory by Admiral and Mrs. Rogers, and an excursion to Mount Vernon on the morning of the 7th was greatly enjoyed by those who attended.

Pennsylvania Pharmaceutical Association.—We would remind our readers resident in this State of the approaching meeting of this Association, to be held in Allentown on the 8th of June. The card of the Secretary of the Association, inviting those who desire to become members, is published on the inside of the cover of this number of this journal, and it would be well for the trade generally to respond by writing for the necessary blank applications.

Hay Asthma or Hay Fever.—Dr. R. H. Weber, of this city, has kindly communicated to us a copy of the prescription which he has uniformly found useful in the complaint mentioned. We have postponed its publication until now, at the approach of the season when hay asthma will again make its appearance. Dr. Weber regards the iodide of potassium as the active agent, but the best results have always been obtained when combined with bicarbonate of potassium and hyoscyamus. The formula is as follows:

℞	Extracti hyoscyami,	gr. xii
	Potassii iodidi,	ʒi
	Potassii bicarbonatis,	ʒii
	Extr. glycyrrhizæ depurati,	ʒiv
	Aquæ anisi,	ʒivss

M. S. A dessertspoonful every four hours, day and night, until relieved. The medicine is to be continued for at least a week, in doses of a dessertspoonful four times daily.

OBITUARY.

Jules Muringer, Ph. G., was born Jan. 7th, 1853, in Philadelphia. He received his education in St. Mary's College, Wilmington, Del., and in the Gymnase Protestant, Strassburg, and after his return in May, 1868, entered the store of Charles Ellis' Son & Co. After graduating from the Philadelphia College of Pharmacy in March, 1872, he took entire charge of Ellis' Laboratory for three months, and served as assistant in the stores of Simes and Gust. Krause, until in October, 1875, he entered into business at 11th and Bainbridge Streets, where he remained until his death, April 4th last.